Dan Jayne's amazing cutaway fighters »

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1/350 SCALE

Head First With Guns Blazing

Commissioned in November 1938, the Tone was the lead ship of her namesake class of heavy cruisers, which were the last heavy cruisers to be built by the Japanese Navy. Her unique design combined firepower with reconnaissance capability, with all four twin 20.3cm gun turrets concentrated forward of the bridge while the aft deck could accommodate up to six floatplanes. This practical layout with well-balanced armament also contributed to the Tone's 35 knot maximum speed and long cruising range. She provided support to the Japanese Navy's carrier force from the start of the Pacific War in December 1941 and took part in many notable engagements including Pearl Harbor, Midway, and the Philippine Sea. During the Battle of Leyte Gulf, Tone was in the vanguard of Vice Admiral Kurita's fleet and contributed to the sinking of the escort carrier USS Gambier Bay. Tamiya is proud to release the 1/350 scale model of this remarkable heavy cruiser.

Model may be assembled as a waterline or full hull display model.

★The distinctive form of the Tone has been accurately reproduced. ★Model depicts the ship as she appeared during the Battle of Leyte Gulf in October 1944. ★Main gun turrets feature fine panel lines and ventilation slit details. ★Highly-detailed superstructure including the compact bridge area. ★Catapults and aircraft handling rails on the aft deck convey a sense of purpose. ★Parts for Aichi E13A "Jake" floatplanes included.

1/350 Scale Japanese Heavy Cruiser Tone

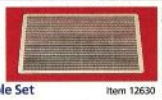
Item 78024

Length: 576mm, Beam: 71mm

Photo-etched parts to depict details such as cranes, catapults, aircraft trolleys, and aircraft propellers are included to further enhance realism.

Detail-Up Parts

This set can be used to reproduce the degaussing cables which were seen on many WWII Japanese Navy warships.



(Example)

1/350 Scale Degaussing Cable Set Item 12630

Display Case

Made from 3mm thick acrylic material, this case is the perfect size to fit 1/350 scale cruiser models such as the Tone.

Item 73018

(Example) Ship model is not included.

Display Case N (w/Base)

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If you don't like the raised panel lines of older kits, you could sand them down and scribe new, recessed lines — or you could follow Dave Koukol's advice and make them look better.

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Editor's Page

By Matthew Usher

The benefits of slowing down

TAKE A LOOK at my workbench at home and you'll see I've been working with some materials I haven't used in years. I have ample supplies of Popsicle sticks, paper plates, toothpicks, construction paper, and dried macaroni close at hand, as well as safety scissors, watercolor paints, and a big bottle of white glue. My hobby knives, razor saws, and super glue bottles are all locked away.

As you may have guessed, my five-year-old son has taken an interest in "making things in the workshop" like Dad does, and we've spent a few weekend afternoons working on various projects. "Various" is really the key word with this kind of construction, since we usually don't decide what it is we're building until we're well into the project, and it starts to resemble something. We could end up with a pirate ship, a castle, a spaceship, or myriad other possibilities.

As a father, it's been really interesting for me to watch how my son works with tools and how he picks what gets glued on next. And speaking of glue, it may be the real teacher here. Since we're using garden-variety school glue, we're learning a lot about patience while it dries. Usually we'll switch to a board game or watch some cartoons while we wait, and if the building session has been particularly intense, a nap is usually a good option.

Spending this time building in the slow lane has taken me back to when I first started modeling. I built everything with tube glue and painted everything with a brush and square-bottle enamel paint. Waiting for things to dry was a big part of the process. Now with instant adhesives and fast-drying airbrushed paints, I can easily finish a model in a couple of days.

But for now I'm happy to keep my own modeling projects on the back burner while the macaroni-and-toothpick projects take over. We all start somewhere (even if we sometimes don't know where we're going) and as long as we're having fun, what else matters?

MATTHEW USHER

editor@finescale.com

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GENERAL

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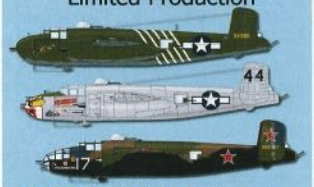

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Scale Talk

Your voice in *FSM*

Custom wardrobes for models

Scale modeling is in my blood. I have been modeling for more than 40 years. It all started with a 1/72 scale kit by Airfix. As I got older and wiser I could afford larger kits, and the collection grew.

As the collection grew, so did the need for more space and shelving. I had simple shelves in my bedroom, but this was not enough. When I got married, a more-sophisticated shelving system was set up. I was very lucky I married an understanding wife who allowed me to have a room to use as I please for my models and model building.

More shelves were needed year after year, and before I knew it I had wall-to-wall shelving in my modeling room. Eventually, dust started to become a problem. Once a year, I would remove the models, dust the shelves, and return the models to their places. But there was always the danger of damaging models or the shelves collapsing.

I decided I wanted to install glass cabinets in place of the shelves. We were having new wardrobes built in our bedroom, and I asked the installer if he thought he could make custom wardrobes with glass doors for my models.

With that, my problem was solved! Having room for future projects is still a concern of mine, so I am always devising new plans to utilize every inch of space.

- Noel Mackin

Erskine Park, New South Wales, Australia

After getting frustrated with the continuous collecting of dust on his models, Noel had glass display cases custom-made.

Modeling workshop

Last October, the Mighty 8th Air Force Museum in Savannah, Ga., hosted an all-day modeling workshop. The speakers were Rafe Morrissey, Floyd Werner, and Dave Powell, all expert model builders. (Turn to Page 44 to see Rafe simulate a wood finish.) They lectured and demonstrated the techniques they were discussing. They did an outstanding job, even providing handouts that described the equipment and materials they used and where to buy them!

I cannot remember when I had a more productive, entertaining, and informative workshop experience. Having the opportunity to see these gentlemen actually build a model was nicer than reading about it.

This was a great program, and one that should be repeated by other advanced model builders at other venues. Thanks to these men and the museum for sponsoring and conducting an event that helped to advance the hobby of scale model building.

- David Thompson

Hilton Head Island, S.C.

Exposing youth to modeling

I enjoyed reading Hector Lugo's letter on securing the futures of our models in the October 2010 Scale Talk. It's important for hobbyists to expose the next generation to various hobbies and interests.

Every year, Boy Scout Troop 101 of Darien, Ill., holds an indoor Christmas campout. The boys spend the weekend having fun playing non-electronic games (such as board games or war games), building plastic models, and sledding. To prepare for the event, I scrounge plastic model kits at garage sales and swap meets. Many times the seller is happy to charge less or donate them when I mention they will be used to bring young boys to the hobby.

The scouts (and dads) have a chance to build plastic models of their choice. I get a kick out of seeing a dad's eyes light up when he sees a box cover with a car once owned or a kit once built. My weekend is spent walking from table to table, supervising, providing assistance, and listening to the scouts tell me all about what they're working on.

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Scale Talk

marine. We've been working on it for the last three years. This year, the boys had the chance to use an airbrush to finish the model — exposure to another aspect of the hobby.

The troop also sponsors an annual hobby night for scouts and adults to bring in their hobbies and do a show-and-tell; rocket building takes place in the spring, and launches over the summer.

Without adults mentoring them, many boys (and girls) may never gain a hobby that allows for a lifetime of enjoyment and enrichment. Thanks for helping to keep the hobby alive!

- Mark E. Greg
Darien, Ill.

Price of modeling

I agree completely with Phil Lewis' comments in the February 2011 Scale Talk. Phil writes that the price of a new model is getting too expensive for a lot of modelers.

Nowadays, it seems that if you haven't added several aftermarket items to your model, it is too plain out of the box. I remember when you simply turned to your spares box or scratchbuilt items to add more detail. It now seems as if the model is judged on its final price rather than the true skills of the builder.

- Bruce Marye
Littleton, Colo.

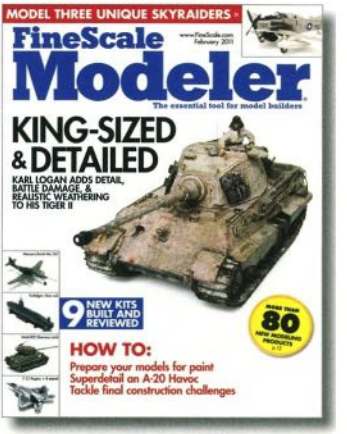
Modeling math

I am writing in response to Phil Lewis' comments about expensive hobby materials in the February 2011 Scale Talk.

Kit prices have always been on the more expensive side. However, John Page, formerly of *Model Railroader* magazine, once advised readers to divide the hours spent on a model into the price of the kit and then consider where else they could get that much entertainment at that price.

For example, if we take $70 spent on a kit, aftermarket parts and paint, and divide that by 30 hours spent on building, we spent $2.33 an hour on the pure joy of model building. Where else can you go to have that much fun at that price? No where I can think of!

- Walter Jacque
Silverdale, Wash.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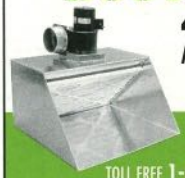

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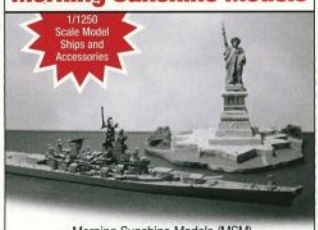

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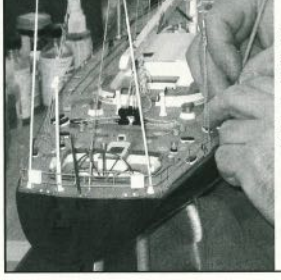

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Finally, an M1114 is here

For builders of modern armor, especially U.S. military vehicles deployed to Iraq and Afghanistan, an up-to-date Humvee has been near the top of the most-wanted kit list (right after MRAPs).

To build an armored M1114, you had to start with Tamiya's kit and add expensive aftermarket parts or employ extensive scratchbuilding.

Now, thanks to Bronco (www.bronco-model.com), you can build one straight out of the box (kit No. CB35080).

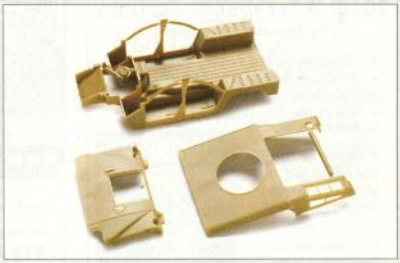
Housed in an oversized box and molded in tan plastic, the parts display fine, crisp detail. The body shell/floor pan is protectively housed in a sturdy cardboard box. This small box says the part is for this kit as well as "No. CB35092," accompanied by a drawing of an M1114 with Frag 5 armor, a kit expected to be released in March.

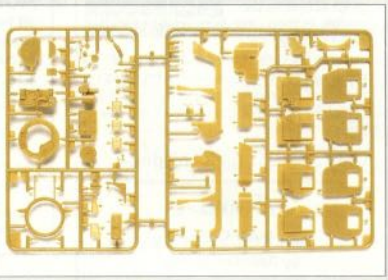
Features include a detailed chassis and suspension; some engine detail; a good-looking interior with bucket seats and ammunition storage; a decent communication package with a Blue Force tracking terminal; and all of the internal supports for the turret. There are lots of extras to add to this or any other modern U.S. scene, including two M4 carbines; an AT4 rocket launcher; a Mk.19 grenade launcher; an M2 .50-caliber machine gun; fuel and water cans; a hand-held GPS system; a clear water bottle; and lots of ammo boxes.

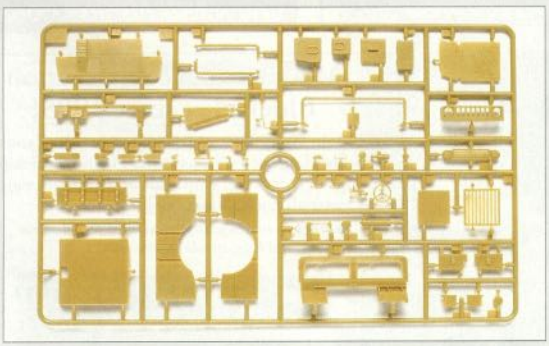
A photoetched-metal fret has engine grilles and lots of brackets and straps.

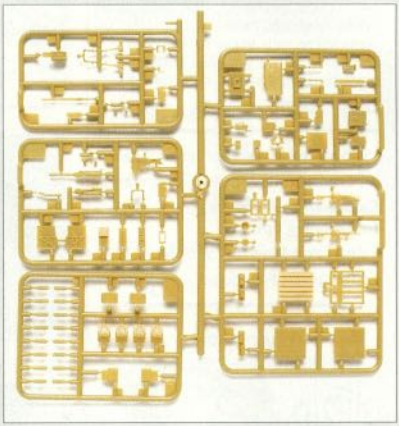
In addition to instrument faces and the BFT screen, decals provide markings for four M1114s seen in the book *U.S. Army HMMWVs in Iraq*, by Carl Schultze and Ralph Zwilling (Concord, ISBN 978-962-361-108-4). One is in NATO three-color camouflage, the rest in desert sand. Three are from military police units. The fourth is mislabeled as an MP vehicle; it is actually a New York National Guard truck. Also, all four are seen in the book without the added turret protection.

The kit is distributed in the U.S. by Dragon Models USA, 626-968-0322, www.dragonmodelsusa.com. The MSRP is $81.50.









Heads down, there's a Gotha inbound

Since Wingnut Wings launched in early 2009 and announced a 1/32 scale Gotha G.IV as an upcoming release, anticipation has run high. The wait is over. The kit is here, and it's a beaut!

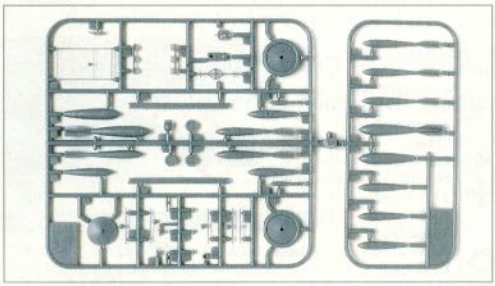
As with the New Zealand company's previous kits, everything about the Gotha (No. 32005) screams quality. Beneath the dramatically illustrated box top, the heavy kit is chock-full of nicely molded medium-gray plastic parts.

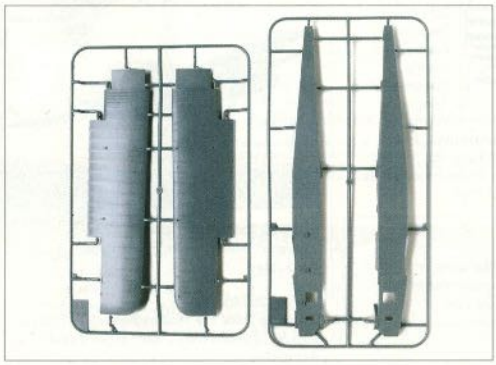
The crew compartment is well detailed, including bombs, cockpit, and gunner's positions. The Gotha's distinctive gun tunnel is a separate part. There are two complete Daimler-Mercedes D.VIa engines.

The lavish instructions are a 39-page color magazine with clear construction diagrams and lots of photos.

Cartograf decals provide markings for five Gothas.

The Gotha, as well as Wingnut Wings' other new kits — Pfalz D.III, Roland D.VIa, R.E.8, D.H.9a, and Hansa-Brandenburg W.29 — are available at www.wingnutwings.com. The Gotha costs $139.





So many decals, so little time

FSM constantly receives great-looking decals from established manufacturers like TwoBobs, Afterburner, Vagabond, and Kits-World as well as newcomers. The recent crop is no exception to the quality and variety we regularly see.

If you like MiG-21s with a difference, Balkan Models' freshman sheets — MiG-21 Early Versions (No. BM-7201) and MiG-21 Exercise Markings (BM-7202) — are just the ticket. The first provides markings for seven early MiGs in Yugoslav air force service; the latter marks five later fighters participating in two large Yugoslav military exercises. Both sheets are 1/72 scale. They're well printed, and the comprehensive instructions have four-view drawings and kit lists to model the versions depicted. Visit www.balkanmodels.si for more information.

Hawker Hurricane fans will get a kick out of the Vital Storm sheets from Aviaeology, 519-742-6965, www.aviaeology.com. Available in 1/48 (AOD48007.1 and AOD48007.2) and 1/72 scales (AOD72007.1 and AOD72007.2), the sheets provide markings for 14 Hurricane Mk.Is in the Battle of Britain as well as Egypt and Malta. The black-and-white instructions detail painting and camouflage as well as differences between airframes.

Two 1/24 scale sets (AOD24007.1 and AOD24007.2) offer five of the 14 aircraft contained in the other sets.

Finally, from Model Alliance comes two sets that emphasize variety. World Air Power Update 4 (MA-72189 and MA-48189) features an Australian F/A-18A Hornet, a Sea King in Marine One colors, a Turkish F-4E Phantom, a Canadian CF-18, and a Japanese F-4E in a lime green commemorative scheme.

WWII-2nd Tactical Air Force 1944-1945 has markings for 11 schemes on eight Royal Air Force aircraft, including Typhoons and Spitfires, a Mitchell, a Mustang, a Mosquito, a Tempest, a Hurricane, and a Boston. The Cartograf decals are complemented by color instructions.

The sets are available from www.theaviationworkshop.co.uk for £12.79 (about $20) and £14.92 (about $23).

New Products

Compiled by Monica Freitag

AIRCRAFT

1/24 DECAL SETS

Vital Storm: Early Hurricanes Part 1, No. AOD24007.1, $23.75. Also available in 1/48 and 1/72 scale. From Aviaeology/ SkyGrid Studio.

Vital Storm: Early Hurricanes Part 2, No. AOD24007.2, $23.75. Also available in 1/48 and 1/72 scale. From Aviaeology/ SkyGrid Studio.

1/32 SCALE KITS

Roland D.VIa, No. 32022, $65. Decals for five aircraft, 7 photoetch parts, 32 page instruction manual. From Wingnut Wings.

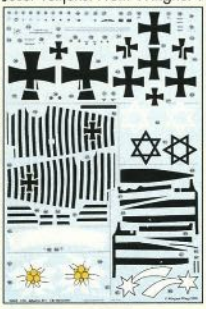
Pflaz D.IIIa, No. 32006, $65. Decals for five aircraft, 8 photoetch parts, 24 page instruction manual. From Wingnut Wings.

R.E.8 "Harry Tate," No. 32012, $89. Decals for five aircraft, 15 photoetch parts, 32 page instruction manual. From Wingnut Wings.

Gotha G.IV, No. 32005, $139.00. Decals for five aircraft, 22 photoetch parts, 40 page instruction manual. Look for a full review in an upcoming issue of *FSM*. From Wingnut Wings.

1/32 DECAL SETS

Albatros D.V "Jasta 18," No. 30011, $19. Includes markings for: Oliver-Beaulieu-Marconnay, Paul Strahle, Kurt Monnington and Josef Veltjens. From Wingnut Wings.



Albatros D.V "The Bavarians," No. 30012, $19. Includes markings for: Rudolf "Rudi" Windisch, Otto Kissenberth, Hans Auer, Karl Schattauer, Theodore Rumpel and Ludwig Hanstein. From Wingnut Wings.

Albatros D.Va "The Bavarians," No. 30016, $19. Includes markings for: Walter Boning, Eduard Ritter von Schleich and Hans Bohning. From Wingnut Wings.

1/48 SCALE KITS

Messerschmitt Bf 109K-4, No. 12228, $33. Special Edition. From Academy, available from Model Rectifier Corporation.

RWD-8 PWS trainer and liaison aircraft, No. 485002, $11.95. From Mirage Hobby, available from Dragon Models USA Inc.

Mirage IIICJ, No. 8102, $42.95. ProfiPack. From Eduard and Associates.

Bf 108B Taifun, No. 8477, $22.95. Weekend Edition. From Eduard and Associates.

1/48 DETAIL SETS

Tornado ADV for HobbyBoss, No. EX316, $16.95. Eduard Mask, from Eduard and Associates.

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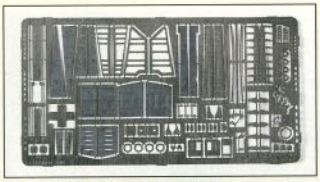
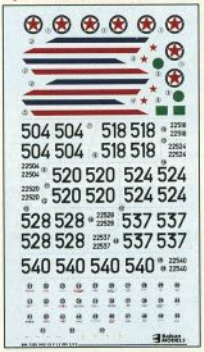


EA-6B undercarriage for Kinetic, No. 48681, $29.95. From Eduard and Associates.
EA-6B electronic equipment (Kinetic), No. 48684, $29.95. From Eduard and Associates.

1/72 SCALE KITS

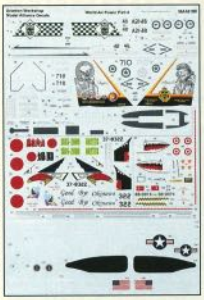
F-22A Air Dominance Fighter, No. 12423, $39. New tooling. Look for a full review in an upcoming issue of *FSM*. From Academy, available from Model Rectifier Corporation.
B-17G Flying Fortress, No. 04283, $40. Look for a full review in an upcoming issue of *FSM*. From Revell AG/Revell Germany.
Sukhoi Su-50 (T-50) Russian fifth generation fighter, No. 7275, $28.50. Look for a full review in an upcoming issue of *FSM*. From Zvezda, available from Dragon Models USA Inc.

1/72 DECAL SETS



MiG-21 early version, No. BM-7201, $7.95. From Balkan Models.

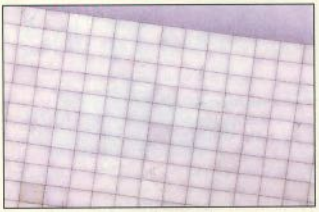
MiG-21 exercise markings, No. BM-7202, $7.95. From Balkan Models.



World Air Power Update No. 4, No. MA-189, 1/72 scale $17, 1/48 scale $24. From The Aviation Workshop Publications Ltd.

WWII 2TAF, No. MA-204, 1/72 scale $21, 1/48 scale $27. From The Aviation Workshop Publications Ltd.

1/144 DETAIL SETS



Large tarmac and taxiway, No. NM144007, $6.75. Aircraft concrete parking area and taxiway. From Noy's Miniatures.

ARMOR

1/35 SCALE KITS

M8 U.S. howitzer motor carriage, No. 35312, $31. "Awaiting Orders" set with three figures. Military Miniature Series No. 312. From Tamiya America, Inc.

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New Products

M5A1 U.S. light tank, No. 35313, $31. "Pursuit Operation" set with four figures.Military Miniature Series No. 313. From Tamiya America, Inc.

SPz Marder 1A5, No. 03092, $42.39. From Revell AG/Revell Germany.

USMC M1A1 Abrams (Heavy Armor), No. 9125, $34.95. Bonus included U.S. tank crew.From Cyber-hobby.com, available from Dragon Models USA Inc.

PzBefWg III Ausf J, No. 6544, $47.95. Smart Kit. From Cyber-hobby.com, available from Dragon Models USA Inc.

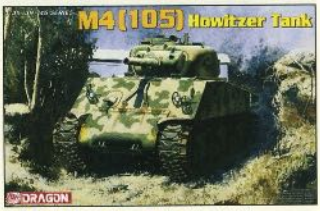
M1114 Up-armored tactical vehicle, No. CB35080, $69.95. Look for a full review in an upcoming issue of *FSM*. From Bronco Models, available from Dragon Models USA Inc.

WWII German Krupp 12.8cm PaK 44 high-velocity anti-tank gun, No. L3526, $49.95. From Great Wall Hobby, available from Dragon Models USA Inc.

YW750 armored ambulance, No. CB35083, $44.95. From Bronco Models. From Dragon Models USA Inc.

PzKpfw III Ausf E France 1940, No. 6631, $47.95. 1939-1945 series. Smart Kit. From Dragon, available from Dragon Models USA Inc.

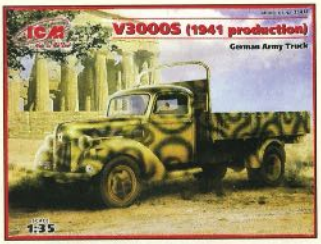
German 7.62cm PaK 36(r) anti-tank gun, No. CB35056, $29.95. From Bronco Models, available from Dragon Models USA Inc.



M4 (105) howitzer tank, No. 6548, $47.95. 1939-1945 series. From Dragon, available from Dragon Models USA Inc.

German 88mm PaK 43/41 gun, No. 2308, $54.95. New tool. Marking for German army. From Trumpeter, available from Stevens International.

Panzerkampfwagen 35(t), No. 25112, $48. From Tamiya America, Inc.



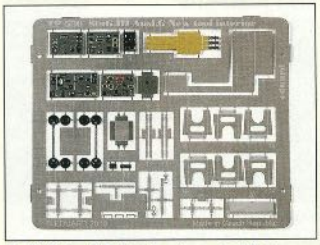
V3000S 1941 production German army truck, No. 35411, $56.95. From ICM, available from Squadron Products.

German heavy truck "Einheitsfahrer-haus" L-4500, No. 3647, $39.95. From Zvezda, available from Dragon Models USA Inc.

Wehrmacht Panzerfähre Fährendeck, No. 82461, $57.99. Decals and color painting reference. From HobbyBoss, available from Squadron Products.

1/35 DETAIL SETS

WWII German Krupp 12.8cm pak 44 high velocity anti-tank gun, No. L3526T, $29.95. From Lion Roar/Great Wall Hobby, available from Dragon Models USA Inc.



StuG III Ausf G interior (new tool for Dragon), No. TP530, $24.95. Contact your local dealer for price information. Zoom set from Eduard and Associates.

1/72 SCALE KITS

M3A1 light tank Kuibishev Soviet Union 1942, No. 726074, $12.95. Look for a full review in an upcoming issue of *FSM*. From Mirage Hobby, available from Dragon Models USA Inc.

Soviet 122mm howitzer, No. 6122, $4.95. From Zvezda, available from Dragon Models USA Inc.

SHIPS

1/35 SCALE KITS

M.A.S. 568 4a Serie, No. 5608, $149. New tooling, decals for two versions. Look for a full review in an upcoming issue of *FSM*. From Italeri, available from Model Rectifier Corporation.

1/350 SCALE KITS

USS *Chevalier* DD-805 1945 *Gearing*-class destroyer, No. 1046, $49.95. Modern Sea Power series. Smart Kit. From Dragon, available from Dragon Models USA Inc.

HMS *Astute*, No. 83509, $25.99. Two piece full hull, decals for hull markings. From HobbyBoss, available from Squadron Products.

JMSDF DDG-177 *Atago*, No. 4536, $94.95. Full hull options. From Trumpeter, available from Stevens International.

Japanese heavy cruiser *Tone*, No. 78024, $206. Ship series No. 24. From Tamiya America, Inc.

USS *Yorktown* (CG-48) plus nuclear-powered attack submarine Russian Alfa, No. 1048, $34.95. Super value pack. From Cyber-hobby.com, available from Dragon Models USA Inc.

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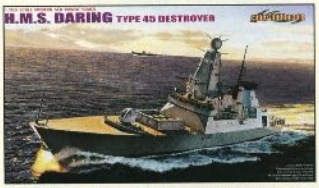

HMS *Daring* type 45 destroyer, No. 7093, $34.95. Modern sea power series. From Cyber-hobby.com, available from Dragon Models USA Inc.

New Products

USS *Long Beach* CGN-9, No. 7091, $34.95. Modern Sea Power series. From Cyber-hobby.com, available from Dragon Models USA Inc.

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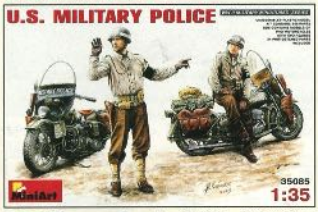
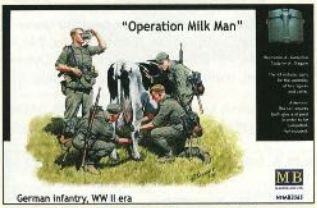


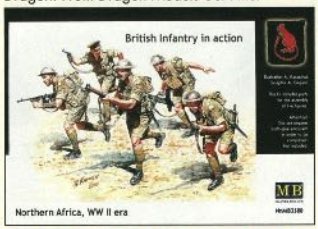
U.S. Military police, No. 35085, $49. WWII Military Miniature Series. From MiniArt, available from Model Rectifier Corporation.



Operation milk man - German infantry, WWII, No. MB3565, $18.95. From Master Box Ltd., available from Dragon Models USA Inc.

Gebirgspioniere Metaxas line 1941, No. 6538, $11.95. 1939-1945 series. From Dragon. From Dragon Models USA Inc.

Ghost Division tank crew Blitzkrieg 1940, No. 6654, $12.95. 1939-1945 series. From Dragon. From Dragon Models USA Inc.



British infantry in action - North Africa WWII, No. MB3580, $15.95. From Master Box Ltd.. From Dragon Models USA Inc.

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Russian infantry of World War I 1914-1918, No. 8082, $11.50. From Dragon Models USA Inc.

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McLaren M23 1974, No. 12045, $160. Big Scale Series 45. From Tamiya America, Inc.

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McLaren M23 1976, No. 20062, $55. Grand Prix Collection. From Tamiya America, Inc.

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458 Italia, No. 07141, $41.45. From Revell AG/Revell Germany.

Black Widow Ford Model "T" pickup rod, No. 85-0060, $20.92. From Monogram, available from Revell.

1958 Ford Thunderbird convertible 2 'n 1, No. 85-4280, $22.95. From Monogram, available from Revell.

Trantula Wild digger with drag chute, No. 85-4298, $22.95. From Monogram, available from Revell.

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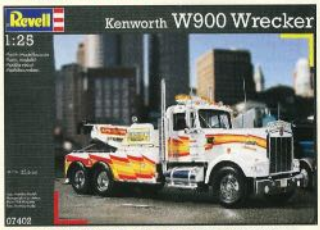

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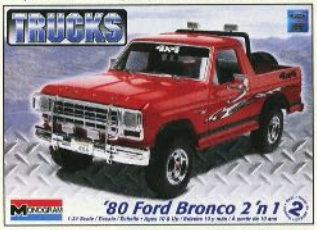
Hawaiian Dodge Charger NHRA funny car, No. 85-4287, $24.94. From Revell.



1980 Ford Brono 2 'n 1, No. 85-7214, $22.95. From Revell.

1967 Chevelle SS 396 2 n' 1, No. 85-4285, $22.95. Street Burner. From Revell.

1955 Chevy Bel Air convetible, No. 85-4269, $22.95. Street Burner. From Revell.

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1963 Chevy Impala SS 2'n1, No. 85-4278, $22.95. California Wheels. From Revell.

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WWII civilian suitcase with umbrella set, No. AB3521, $10.95. From Bronco Models, available from Dragon Models USA Inc.

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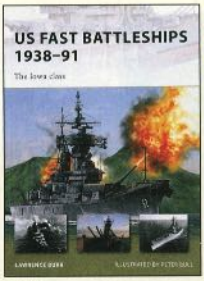

US Fast Battleships 1938-91 The Iowa-class, $17.95, by Lawrence Burr, illustrated by Peter Bull, soft cover, 48 pages, color renderings, all black-and-white photos, ISBN: 978-1-84603-511-1. From Osprey Publishing.

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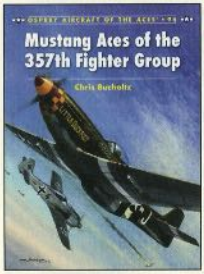

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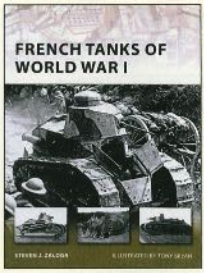

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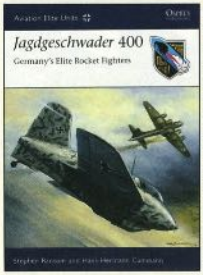

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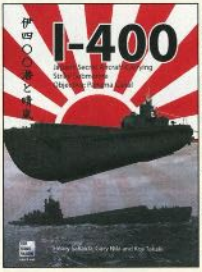
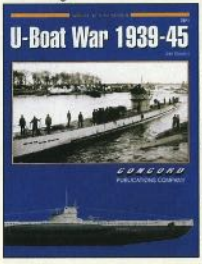
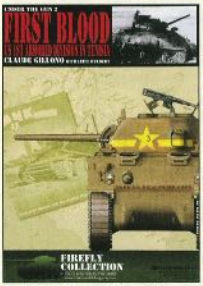


I-400: Japan's Secret Aircraft Carrying Strike Submarine, $19.95, by Henry Sakaida, Gary Nila and Koji Takaki, soft cover, 144 pages, 40 color photos, 100 black-and-white photos, ISBN: 978-0-9554268-1-0. From Hikoki Publications, available from Specialty Press.

The Messerschmitt Me 262 - A Guide to the Luftwaffe's First Jet Fighter, Airframe & Miniature No. 1, $28, by Richard A. Franks, soft cover, 112 pages, mostly color photos, few black-and-white photos, some drawings, ISBN: 978-0-9567198-0-5. From Valaint Wings Publishing.



U-Boat War 1939-45, $16.95, by Ian Baxter, soft cover, 72 pages, all black-and-white photos, Armor at War Series ISBN: 962-361-175-7. From Concord Publications, available from Dragon Models USA Inc.



Under the Gun 2: First Blood — US 1st Armored Division in Tunisia, $24.95, by Claude Gillono with Leife Hulbert, soft cover, 33 pages, all black-and-white black and white photos, ISBN: 978-0-9806593-1-3. Firefly Collection the Oliver Publishing Group, available from Dragon Models USA Inc.

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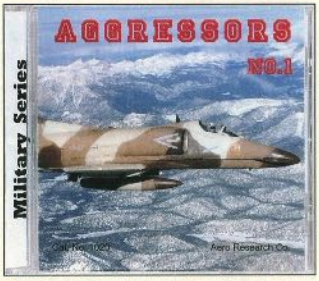

Aggressors No.1, No. 1020, $12.95. 152 photos of 10 different aircraft used in air combat training. From Aero Research Co.

TOOLS

Fine craft saws II for scribing, No. 74097-800, $9.50. From Tamiya America, Inc. **Modeler's knife pro replacement blade straight,** No. 74099-380, $7. From Tamiya America, Inc.

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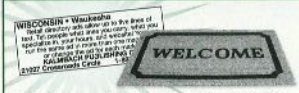

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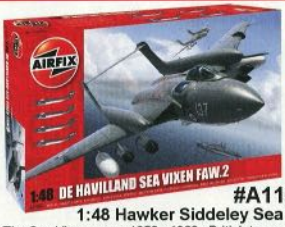

New Tool

Specification
Model Scale: 1:48
Number of Parts: 227
Dimensions (mm): L340 x W317
Requires Painting: Yes

#A11002
1:48 Hawker Siddeley Sea Vixen FAW.2

The Sea Vixen was a 1950s-1960s British two-seat jet fighter of the Fleet Air Arm designed by de Havilland. The Sea Vixen was a capable carrier-based fleet defence fighter that served into the 1970s.

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P11503

10 STEPS to highlight raised panel lines

Distressing an old kit can make it seem modern

BY DAVE KOUKOL

In an era of kits featuring jaw-dropping recessed panel lines and surface detail, some exceptional kits from "back in the day" have remained unbuilt and hidden in boxes in garages, basements, and attics the world over.

The reason for their exile? Simple: Raised panel lines and surface detail — perfectly good and accurate kits relegated to the "shelves of shame" in favor of their modern counterparts.

Using simple variations of common techniques, these seemingly obsolete legends can join any modeler's collection. And there's no scribing required!

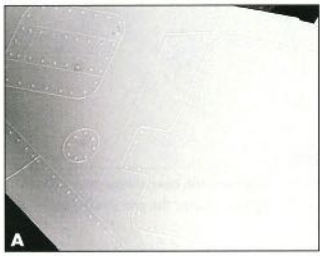
I became enamored with the F-8 Crusader while watching "Dogfights" on the History Channel. So I had to add one to my 1/48 scale aircraft collection. I had two options: Drop $60-$70 on a modern kit with great features, or do something exceptional with a $15 Monogram kit I've had in my stash since 1991. What the heck, I thought, there's nothing like challenging the old comfort zone.

Dave's easy highlighting method for panel lines works over decals, too.

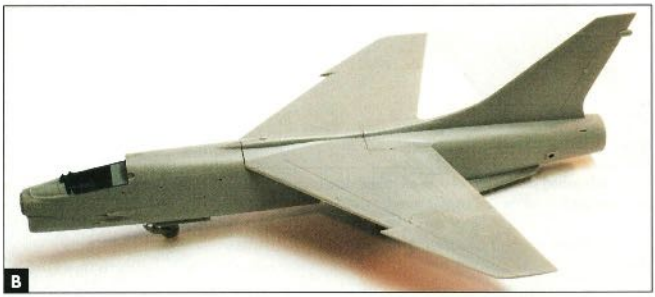
What you'll need

- Kit with crisp, well-defined raised panel lines (later Monogram kits are great for this)
- Tamiya tape
- Mr. Surfacer 1000 or Mr. Dissolved Putty
- Ultra-fine Sharpie
- 600-grit sanding paper or film
- Flat black paint (enamel or lacquer recommended)
- Main colors for finished subject
- Pledge Future floor polish
- Sludge wash
- Clear flat, gloss, or semigloss
- Soft, medium-size paintbrush
- Airbrush

Careful painting and sanding make the raised panel lines on Monogram's 20-year-old 1/48 scale F-8 Crusader stand out — just like a wash defines engraved lines.



Monogram's 1/48 scale Delta Dagger was produced around the same time as the Crusader Dave built, and features similarly well-molded panel lines.



Dave built the F-8 as he does any other model, constructing the major subassemblies, then filling and sanding.

I moved forward with caution and patience as well as a sense of anticipation. Several weeks later, my anticipation was met with a great degree of satisfaction and a model that has sparked many questions at contests, namely, "How did you do those panel lines?" The answer is a simple, straightforward process that requires only average skills and a good measure of patience.

❶ Choose a kit

Finding the right kit is critical for this technique. Look for well-defined raised panel lines, as on Monogram's 1/48 scale F-102, **A**. Lighter surface detail is more difficult to work with; results will be more subdued, but still effective.

❷ Basic assembly

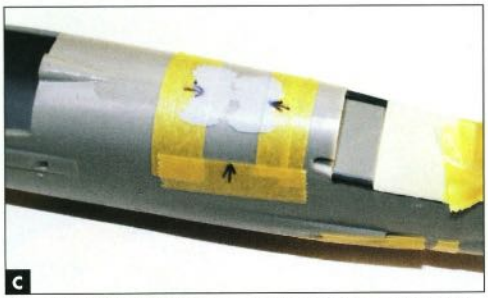
Dive into assembly, seam removal, and blending and preparation for paint, **B**. Forgo primer on this project to minimize paint buildup on raised details.

❸ Restore damaged detail

Replacing obliterated lines is easy — it just takes a little more time and attention. First, apply masking tape so one edge is against the damaged line, extending the tape just beyond the end of each line. If you have a lot of lines to replace, mark the edge of the adjacent tape so there's no confusion. Apply Mr. Surfacer 1000 or Mr. Dissolved Putty along the marked tape edges. Draw it up to the tape, then feather it away to blend it into the surface, **C**. Let it dry. Before removing the tape, lightly sand the blended edges — not the tape edge — with 600-grit sandpaper.

❹ Blending new lines

If any of the restored panel lines are jagged, lightly sand them with 600-grit sanding film, being careful to avoid obliterating the new line, **D**. Replace rivet and fastener detail with small drops of Mr. Surfacer 1000, Mr. Dissolved Putty, or super glue

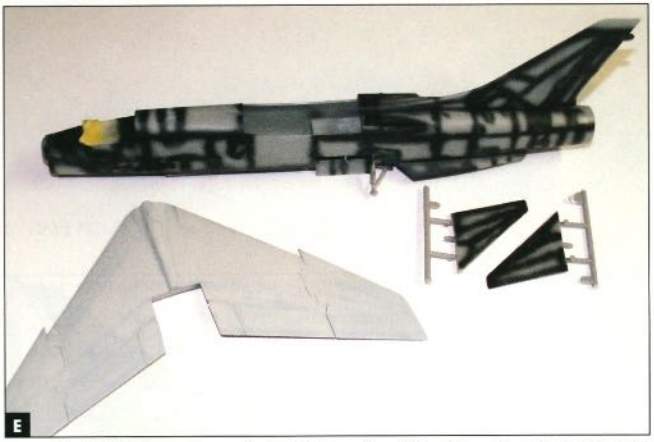


C

Dave outlined damaged panel lines with thin masking tape, then painted Mr. Surfacer along the edge to replace the raised detail. The arrows indicate which edge of the tape represents the panel line.

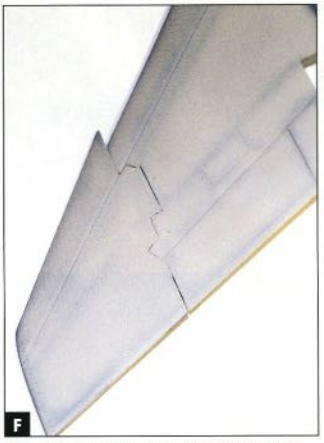
D

After removing the tape, Dave smoothed out rough spots with 600-grit sandpaper. He replaced rivets with dots of super glue.



E

Dave airbrushed black enamel over all raised details and panel lines. It doesn't need to be neat, but it is important that all the lines are covered.



F

Airbrushing the main camouflage colors, Dave used a light touch over the pre-shaded panel lines.

applied with the tip of a toothpick; allow to dry.

5 Pre-shading

Lightly airbrush flat black over raised panels. It's important to keep your pre-shade coats light to avoid obscuring surface detail, **E**. There's nothing hard about pre-shading; just spray a thin line of paint freehand. It doesn't have to be too neat. For more information, read "The art of pre-shading" in the October 2010 *FSM*. Allow the pre-shaded lines to dry overnight.

6 Paint

It's time to transform your ugly duckling into the swan you've been envisioning. Airbrush the camouflage colors, taking care to keep coverage as light as possible over panel lines, **F**. Then let it sit for at least 24 hours — I recommend 48 if you're using gloss paint.

7 Distress

Grab some 600-grit sanding film, a bowl of water, and a fistful of courage. The aim is to lightly distress the body colors by sanding off panel lines and other raised details to reveal the black pre-shading. Bring a very light touch and patience.

Starting underneath, lightly sand panel lines in the direction of the airflow. After a couple of light passes, you'll notice the pre-shaded panel lines becoming more prominent, **G**. Subtle effects are better than bold ones, so go slowly — you'll sand right through the black if you're not careful. Don't worry about scratches and scuffs in the paint; Pledge Future floor polish will repair those. Work your way around the aircraft until all the panel lines and raised detail are exposed.

8 Touch-up

If you sand through the black to the plastic, simply repeat steps 4 to 6. In areas where the paint has been marred by sanding, blend the damage with 600-grit sandpaper and repaint.

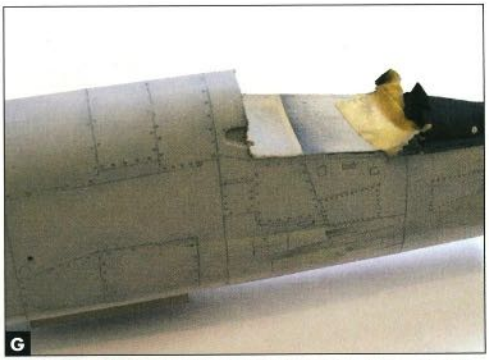
9 Gloss and decals

After wiping the model with a damp paper towel or cloth to remove sanding residue, apply Future or any other clear gloss in preparation for decals. After adding and sealing the decals, repeat steps 6 through 8 anywhere decals cross panel lines, **H**.

10 Final weathering

Apply a sludge wash — a thick mixture of acrylic paint, water, and dishwashing soap — to recessed details on the model. Other dry-brushing and post-shading effects can also be added.

Finally, apply your gloss, semigloss, or flat coat. Then stand back and admire your handiwork! **FSM**



G

After just a couple of passes, Dave had the black paint of the pre-shaded lines showing nicely. Don't sand too hard or too much or you'll expose the plastic.

H

Dave gloss-coated and decaled the Crusader. Careful sanding highlighted the panel lines under the decals.

Don't overlook those old-but-good kits in your stash just because they have raised detail. With the last parts and final weathering, Dave's F-8 looks as sharp as a modern kit with engraved lines.

Showcase Special

Terry Young

Battle of the Bulge diorama

A documentary about the Battle of the Bulge inspired Terry Young, of Telford, Shropshire, England, to build. Terry's 1/35 scale diorama depicts the 9th SS Panzer Division (Hohenstaufen) advancing on the Belgian town of Vielsalm on December 21, 1944. Terry wanted to show the difficulties encountered by the Germans: weather conditions, fuel shortages, and narrow roads clogged not only with German armor but also abandoned American vehicles.

The diorama took Terry three years to build and includes figures, groundwork, scratchbuilt trees, a Panther, a StuG III, an M3 halftrack, a jeep, and lots of other details. Terry wanted to minimize the need of a backdrop for photography. "The viewer should be totally immersed in the scene," says Terry.

The base of the model is a ¼"-thick, 32" x 24" sheet of medium-density fiberboard painted with acrylic wood primer and built up with polystyrene ceiling tiles stuck together and to the board with a high-power household glue. Terry then covered the whole base with sheets of newspaper soaked in white glue and, after the newspaper dried, sprayed with an acrylic primer so groundwork material would adhere. Strips of 1mm styrene sheet created the road running through the middle of the diorama. Joints were filled with epoxy putty and sanded flush when dry.

Terry scratchbuilt trees from plastic-coated garden wire bent and cut into shape, then covered with a 1:1 mix of Polyfiller and white glue. He created a bark-like texture using sandpaper and a hobby knife. Humbrol flat grass green and yellow enamels colored the leaves; hanging basket moss sprinkled with dark green static moss served for pine trees. The trees were secured to the diorama with masking tape, which was then covered with Celluclay.

After the trees were in place and the road surface complete, Terry brought on the snow: a 3:2 mix of Woodland Scenics snow and baking soda. "Looking at images from this battle, the snowfall seems to be pretty uneven and patchy," says Terry. "I tried to model the diorama the same way." Terry masked the road surface, then sprayed the whole scene with firm-set hairspray. "The snow mix is a gray slushy mess at first, but it turns white once the hairspray has set," he says.

Terry used Tamiya's Sturmgeschütz III Ausf G, early version (kit No. 35197), as the centerpiece of his diorama, detailing the StuG with brass fenders, metal track links, a *saukopf* mantlet, a turned-aluminum barrel, concrete armor in front of the commander's hatch, and photoetched-metal grilles on the engine deck. Terry also made tarpaulins from paper tissue soaked in diluted white glue and draped over the rear stowage and gun mantlet.

Other Tamiya kits in the diorama include a Schwimmwagen Type 166 (No. 35224), an M21 mortar carrier (No. 35083), a Willys MB ¼-ton truck (No. 35219), and a German Panther Ausf G, late version (No. 35176).

Terry populated the scene with a mix of Dragon, Tamiya, Tristar, Jaguar, Trumpeter, Legend, Warriors, and MK 35 figures. "I wanted to give the model a regimented feel, but still show the rag-tag look that was beginning to creep into the German forces at this time in World War II," says Terry. "So, I purchased as many kits as I could find with the subjects wearing reversible winter field uniforms, greatcoats, ponchos, or a mixture of all." They all received replacement heads from either Hornet, Legend, Warriors, Firestorm, or Verlinden, and most are at least slightly if not completely remodeled. (See Page 28 to learn how Terry converts his figures.) Weapons and equipment are mostly from Tamiya; some include added Airwaves photoetched-metal details. Terry made slings and straps from lead foil.

He says this diorama allowed him to practice a wide range of modeling techniques, including construction, painting, scratchbuilding, detailing, and more. "I can't wait to build the next one," he says.

continued

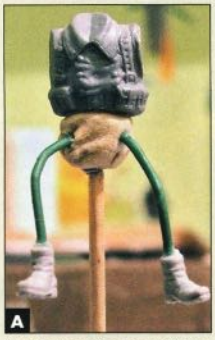
www.FineScale.com

Learn more about Terry's technique for scratchbuilding trees.

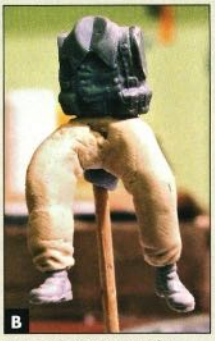
Terry spent three years modeling his Battle of the Bulge diorama. "I want to bring everyone who sees it right back to December 1944," he says.

Terry's tips for figures

Adding your own figures to a diorama can make it unique. "Figures bring a diorama to life and add character. I like to remodel figures whenever possible, varying their heights to add an extra touch of realism," says Terry.

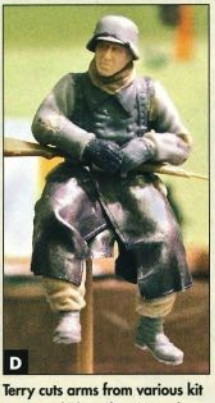


First, Terry adds epoxy putty to the base of the figure's torso for the hips. While the putty is still pliable, he pushes two lengths of garden wire for the legs into the putty and super glues them in place. After drilling small holes in the feet, he super glues them to the garden wire.



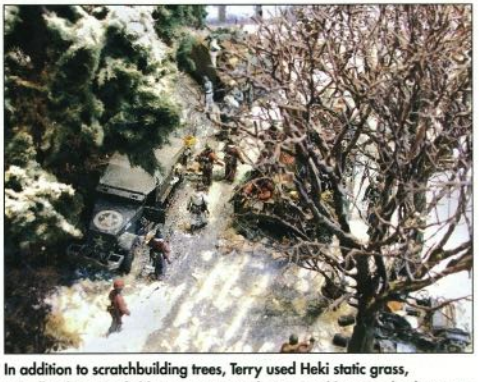
Terry sculpts putty over the garden wire for the legs. First, he rolls the putty into long strips, then coils it around the wire. Next, he shapes the putty with his fingers until he's satisfied, then smoothes it with wet fingers or a wet paintbrush. Use a toothpick for folds and creases.

Next, Terry adds the original head, a helmet sculpted from epoxy putty, lead foil for the fringe of the coat, pockets shaped from epoxy, and buttons punched out from thin styrene sheet.

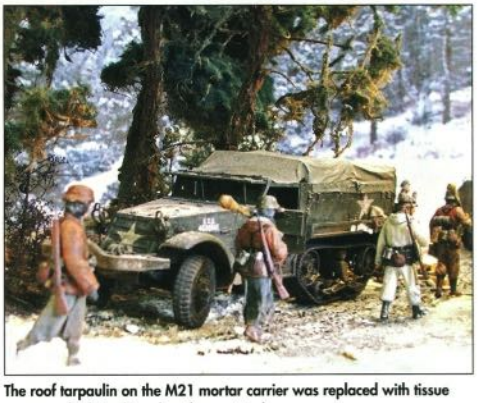


Terry cuts arms from various kit parts and glues them into place, filling gaps with epoxy putty and sanding them to shape before fixing them to the torso. After the arms are secure, he glues the hands in place.

Terry added Zimmerit to the front of his StuG III by rolling out epoxy putty on his workbench to a thickness of about .5mm, then trimming it with a craft knife and stamping the waffle pattern into it using a piece of photoetched-metal glued to a small piece of styrene sheet with a cocktail stick for a handle.



In addition to scratchbuilding trees, Terry used Heki static grass, Woodland Scenics field grass, tarragon leaves, and hanging basket moss for vegetation.



The roof tarpaulin on the M21 mortar carrier was replaced with tissue paper soaked in white glue, then painted.

Terry weathered the Panther with artist's oils. "I liberally coat the entire model with mineral spirits, and then, using a small paintbrush, I dab blobs of thinned black, white, yellow, yellow ochre, and rust wherever rain would run down vertical surfaces, adding more mineral spirits if needed," he says.

All of Terry's figures were painted with Andrea Color and Vallejo paints as well as artist's acrylics. **FSM**

Showcase Special

Charles Heyer, Konstantin Degtyarev, and Tory Mucaro

Bear Hunt

Advanced electronics and modeling animate an exciting 1/72 scale display

Site of the 2008 International Plastic Modelers Society/USA Nationals, the Virginia Beach Convention Center is a massively spacious venue that dwarfs even the largest displays. But in a cavernous hall filled with more than a thousand contest entries, one project drew the attention of nearly all conventioneers: "Bear Hunt," a 1/72 scale composition of modeling, motion, light, and sound.

The project's triumvirate of creators — Charles Heyer, Konstantin Degtyarev, and Tory Mucaro — combined impressive skills in electronics, mechanics, and modeling in a multimedia presentation that placed third in the "group entry" category but was nevertheless the crowd favorite, winning Popular Best of Show from as critical an audience as a modeler could find anywhere. Of course, the audience was well-entertained by simply pushing a button to watch the Tupolev's contra-rotating propellers start in proper order while recordings of radio transmissions (in both Russian and English) help narrate the scene.

Even the judges were drawn into the display. Recalling a story he heard at the awards ceremony, Tory says, "During the judging on Friday night, the lights in the hall, which were on an automatic timer, went out, leaving the judges in the dark. One of the judges ran over to "Bear Hunt" and pressed the button to see how it would look in the dark. And after the ceremony, as we were about to disassemble it, the chief judge raced over to request one more performance."

The display depicts a Cold War aerial encounter in the mid-1980s featuring aircraft at opposite ends of their careers; the Convair F-106 Delta Dart went out of service in 1988, while the Tupolev Tu-95MS (NATO reporting name Bear-H), based on the Tu-142, had only emerged as a cruise-missile carrier in the early 1980s. The F-106 in "Bear Hunt" wears the markings of the New Jersey Air National Guard 119th Fighter Interceptor Squadron, the last to fly the Dart. (All three builders live in New Jersey.)

It all started with Konstantin, an electronics engineer from Belarus who at one time served in the former Soviet Union as a MiG-31 avionics engineer. He solicited the help of Charles and Tory to realize his concept of an animated scale-model interception.

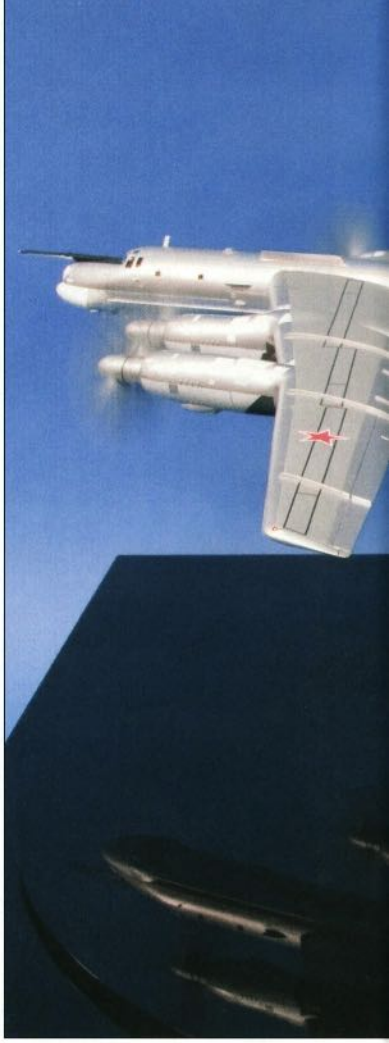
Two years and hundreds of man-hours later, the delegation of labor had become clear. On the display base, Konstantin designed the electronics, using microprocessors to synchronize the display's motion with the audio. Charles, a professional prototype model maker, built the mechanism and housing for a turntable that rotates the two aircraft. Tory, a professional scale modeler, designed the front-panel graphics and gave the "story" continuity.

For the Tu-95, Charles designed and built the mechanism that starts the contra-rotating propellers in their actual sequence. Konstantin used microprocessors to control four motors plus lighting for the aircraft, writing code to coordinate individual sequences for audio, engine start-up, and the aircraft's lights. Tory took care of the scale modeling, building and painting Trumpeter's Tu-95 and installing LED lighting.

Tory also built and lighted the F-106, a Hasegawa kit, with advice, paint, and decals from longtime *FSM* author Pat Hawkey. Again, Konstantin's microprocessor designs controlled the sequence of events; his code runs about 90 seconds of audio as well as the navigation lights and a tricolor LED for different phases of the afterburner.

Nine C batteries power the action; with hundreds of performances during the show, batteries were changed twice a day.

For anyone who wonders whether these three modelers can top this *tour de force*, "A trip to the 2012 Nationals might provide the answer," Tory says coyly. Can they do it? Only August in Orlando will tell — at next year's Nationals in Florida.



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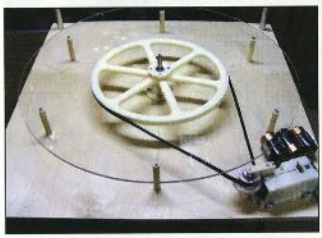
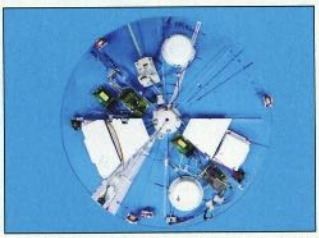
Visit our website to see and hear "Bear Hunt" in action!

Three modelers, two models, and an elaborate display: "Bear Hunt," winner of Popular Best of Show at the 2008 IPMS/USA National Convention in Virginia Beach, Va. Props spin, lights and afterburner flash, and audio crackles with Russian and American radio transmissions while the whole tableau slowly rotates over an intricately wired, motorized display base.



Charles Heyer, of Cedar Grove, N.J., designed and built the belt-driven turntable that makes the models go 'round.



Konstantin Degtyarev, once an avionics engineer in the Soviet air force, designed electronics that run the display's audio and lights in synch. He lives in River Edge, N.J.

The hardware-packed turntable quietly rotates the display at about 1/3 rpm.

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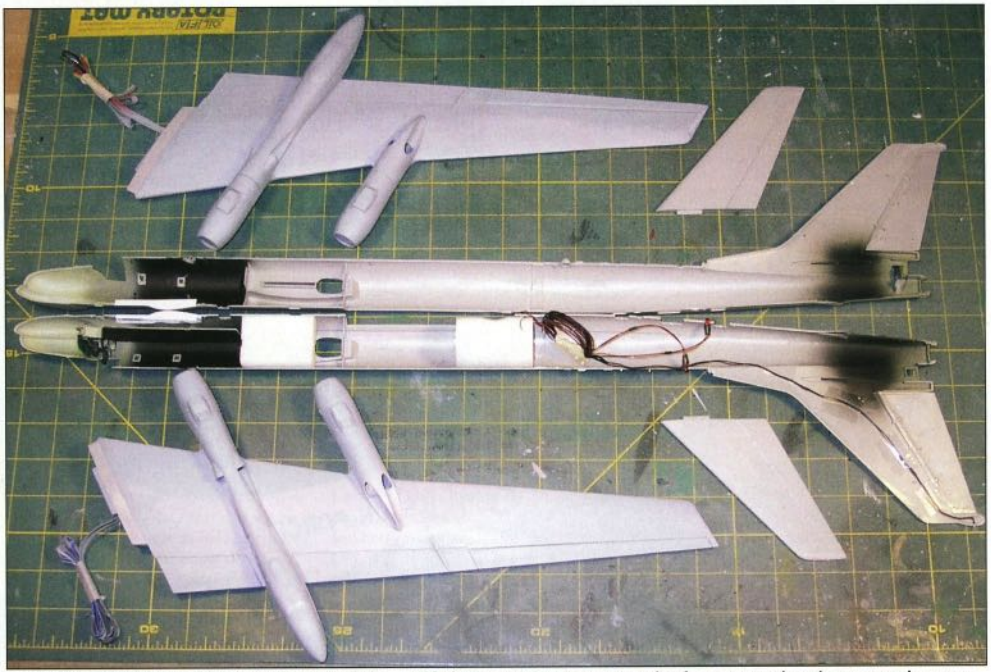
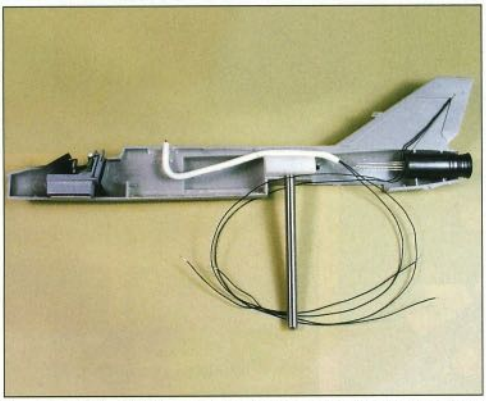


Tory Mucaro, a professional scale modeler from Howell, N.J., modified Trumpeter's Tu-95 to accommodate four motors and gearboxes to run the contra-rotating props, reinforcing the wings to handle the extra weight. Charles designed the mechanism to run the propellers in independent sequence.



Tory also built the F-106 to carry LEDs, including a tricolor unit to mimic the afterburner with varying light intensity.

Sidling up to the Soviet plane, the Dart features paint and decals from *FSM* author Pat Hawkey.

Bear in the air! "The lower nacelles are the only concession to scale," Tory says, explaining they had to be removable to access the electric motors and contra-rotating gearboxes.

U.S. AIR FORCE
Bear Hunt.
It is the mid 1980s, and as the Cold War enters its fifth decade, tensions between the United States and the Soviet Union remain high. A factory-fresh Tu-95MS Bear is flying off the northeast coast of the United States and begins to wander toward the shores of New Jersey. Two NJANG F-106s are scrambled from Pomona Airport in Atlantic City to investigate the intruder. In an interesting twist of fate, Russia's latest version of the Tu-95 Bear comes face to face with two of the last F-106 Delta Darts in service, a chance meeting of the old and the new.
Press to start

"Assume escort position and lead him home," comes the order, and the F-106 sends a Soviet Tu-95MS packing. The 119th Fighter Interception Squadron of the New Jersey Air National Guard was the last to fly the F-106, giving up its last Darts in 1988. **FSM**

Showcase Special

Dan Jayne

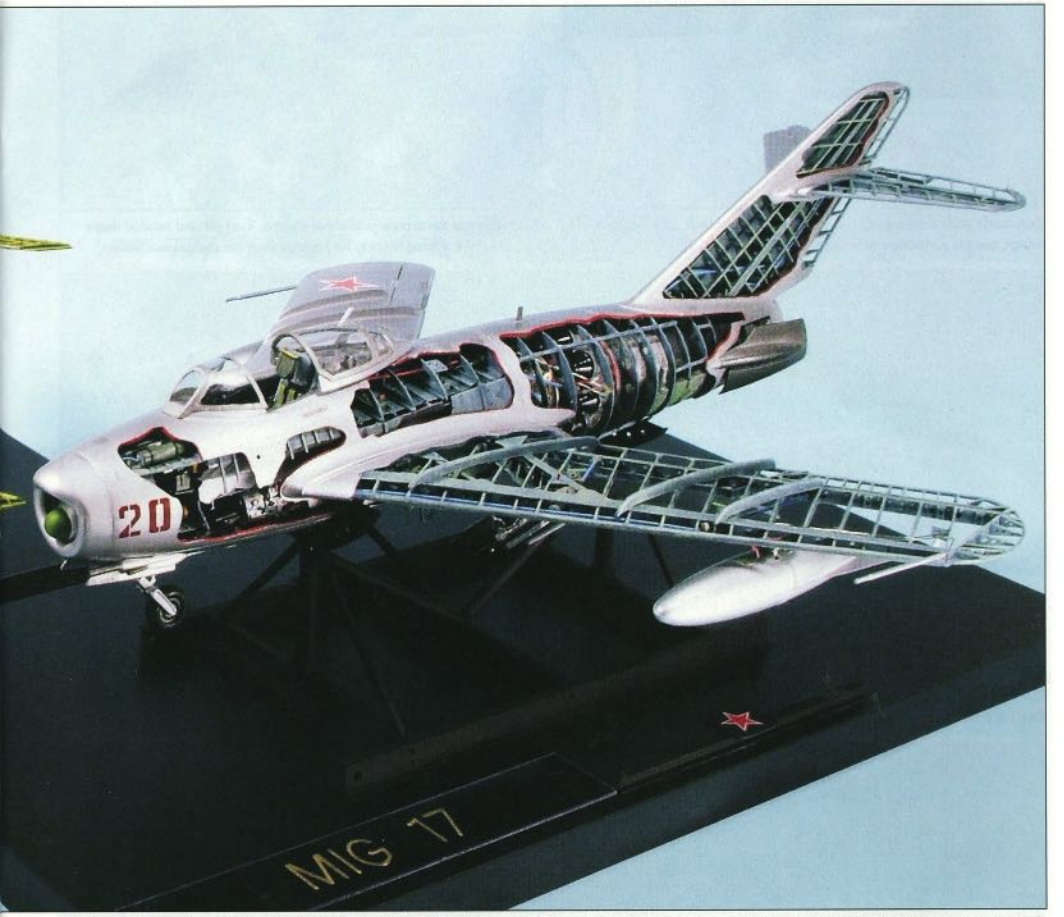
Cold War fighters revealed in detailed cutaways

Dan Jayne's work is well known to *FSM* readers; his detailed cutaways have graced the magazine's pages several times in recent years — and each build is a masterpiece.

This time, Dan turns his attention to two Cold War adversaries, the Soviet Union's MiG-17 and the North American F-86 Sabre. The latter rose to prominence with the U.S. Air Force in the Korean War. The MiG arrived too late for that conflict, but the two aircraft would face each other over the Straits of Taiwan in 1958 when Communist Chinese MiGs clashed with Nationalist Chinese Sabres. Large numbers of both types were supplied to air forces throughout the world and used in wars in Asia and Africa.

Dan started with Hasegawa's 1/32 scale F-86 (No. 08060) and used Eduard photoetched metal (sets No. 32027 and 32028) for some details. The MiG started as Trumpeter's 1/32 scale kit (No. 02206) with Eduard details (set No. 32051). Both kits provided engines and basic detail.

During the builds, Dan used the superbly detailed cutaway drawings in *An Illustrated Anatomy of the World's Fighters* (Zenith,



Dan reveals the inner workings of the American F-86 (left) and the Soviet MiG-17 with detailed cutaways of the early jets. He had some help from Eduard photoetched metal, but most of the detail and all of the framework is scratchbuilt.

ISBN 978-0-7603-1124-0), as well as photos in *Warbird Tech Volume 40: Mikoyan Gurevich MiG-15* (Specialty, ISBN 978-1-58007-081-2) and *F-86 Sabre – Walkaround No. 21* (Squadron Signal, ISBN 978-0-89747-409-2).

"I dove into the project by cutting open both left fuselage halves with a Dremel (motor tool)," Dan says. Then he scratchbuilt the port wings and horizontal stabilizer, internal framing for the fuselage, and all of the internal equipment.

He airbrushed both aircraft with Testors Metalizer and sealer, then marked the models with decals from his spares box.

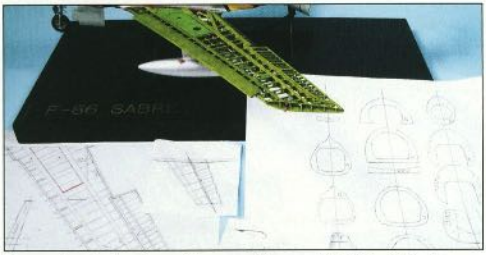
"The MiG was an eight-week build, the F-86 a little longer at 10 weeks," Dan says.

"The finished models were an extremely satisfying project, and I was pleased by the … results. A lot of research, patience, and scratchbuilding really enhanced both models."

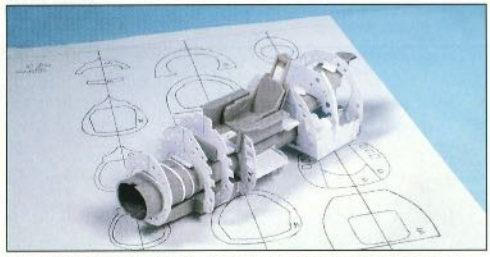
So Dan, will you build another cutaway jet fighter?

"You bet!" he says.

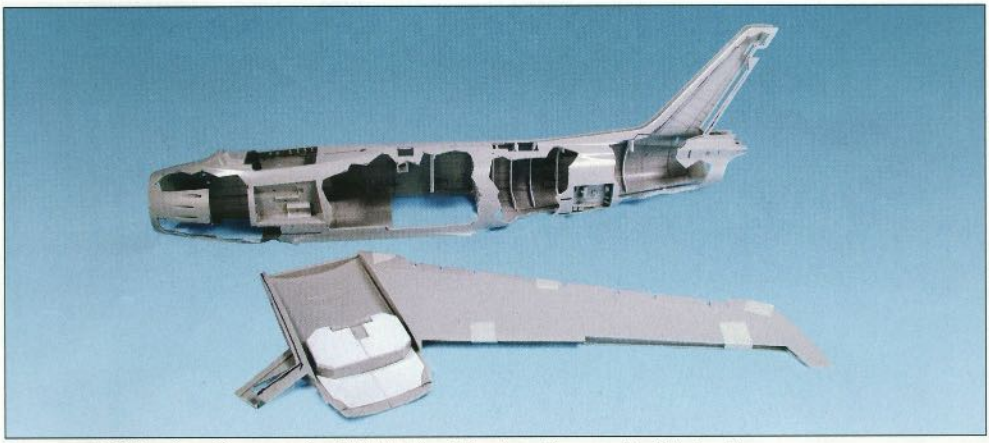
We can't wait to see it.



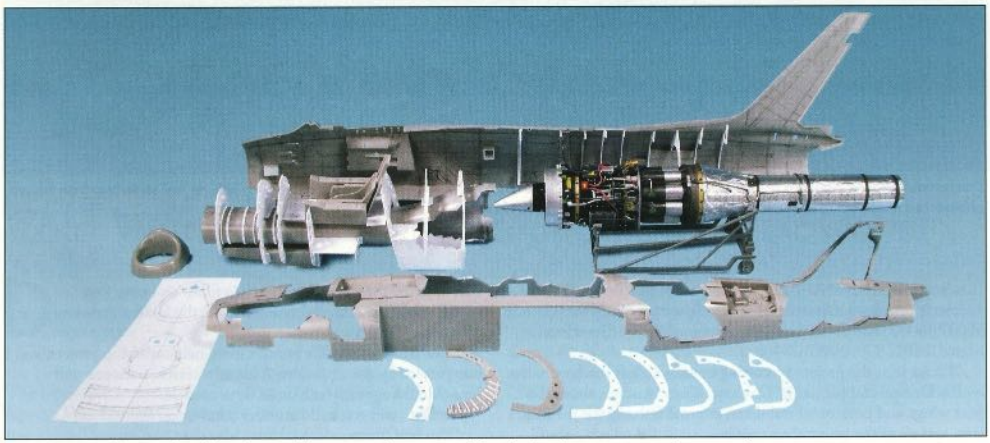
Dan made scale drawings of the areas to be scratchbuilt, including the wings, control surfaces, and frames.



He transferred the drawings to sheet styrene, then cut and sanded those shapes before adding them to kit parts such as the cockpit and intake.



Dan cut open the kit's fuselage with a motor tool so all of his interior detail work could be seen on the finished model.



Ready for assembly: Dan detailed and painted the engine, then prepared the other fuselage components for construction.

Dan cut up then reassembled Hasegawa's 1/32 scale F-86 Sabre to model the USAF's premier Korean War dogfighter.

Trumpeter's 1/32 scale MiG-17, warts and all, after Dan sliced and diced the kit. **FSM**

Reader Gallery

▲ **MARK CLARK**
LINCOLN, NEBRASKA
From the home of the Cornhuskers comes a Hummel from World War II: Mark built Dragon's 1/35 scale kit of the German self-propelled gun.

◀ **DR. DONALD CAPONE II**
WAXAHACHIE, TEXAS
"This model represents an F6F-3 on the USS *Princeton* in 1944," Donald says. When he found the clear parts were missing from his Arii 1/48 scale kit, he scooped parts from an Eduard F6F-5. "Thank you, Eduard, for always putting extra parts in your kits!" he says. Donald fitted a True Details cockpit kit designed for the Hasegawa kit "with a little persuasion," he says. He added Aeromaster stencils to the kit decals.

▲ **ALLAN INOUYE**
NORTH BEND, OREGON
Building Trumpeter's 1/32 scale Fairey Swordfish, Allan painted all parts before assembly. He added control cables and antennas made from stretched sprue. Photography by Memo Jasso at Brown's Studio in North Bend.

▼ **KEVIN NG**
MARKHAM, ONTARIO, CANADA
Kevin says he built Academy's M551 Sheridan from the box, painted it with Tamiya acrylics, and weathered with an enamel wash, pigments, and pastels.

▲ **SAM IVEN**
FORT COLLINS, COLORADO
Following an interest in light armor and the North African battles of World War II, Sam built Tamiya's 1/35 scale Carro Armato M13/40 over a weekend. He painted with Tamiya acrylics and used a salt-barrier chipping technique he got from *FSM*'s special issue *How to Paint & Weather Scale Models*.

Reader Gallery

▲ KURT WARREN
BLANDON, PENNSYLVANIA
AMT/Ertl's 1/72 scale F-18 got a good going-over from Kurt, who scratchbuilt a cockpit, ejection seat, and exhaust. He cast resin copies from a Hasagawa kit for the landing gear, and cut and dropped the flaps and slats. After designing his own decals, he had them printed at a local office supply store, "with the exception of the ram's head and *AG* on the vertical tails," he says. He painted them through masks made from thin acrylic sheet at a sign-printing shop.

▲ JOSE DARDON
GUATEMALA CITY, GUATEMALA
For a floatplane contest in his local modeling club, Jose chose Hasegawa's vintage 1/72 scale Curtiss SOC-3 Seagull — and won first place! He added scratchbuilt details to the interior, along with: internal framing; an instrument panel; seats and seat belts; radio equipment, including a loop antenna; and a vacuum-formed canopy from Falcon. He stretched sprue for the antennas and rigging, and painted with Testors Model Master enamels and Alclad II lacquers.

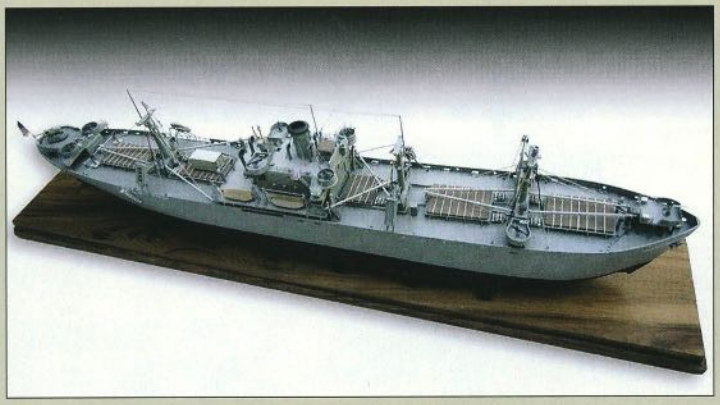
▲ BILL JANOSKI
SARVER, PENNSYLVANIA
Alclad II paint and Aeromaster decals finished Bill's Tamiya 1/48 scale P-51D. "About 50 pieces added," says Bill, "mostly to the cockpit, with brake and fuel lines, too. Can't get enough!"

SEND US YOUR PICTURES!

Shouldn't *your* model be in Reader Gallery? *FineScale Modeler* is always accepting new material from around the world.

Upload high-resolution digital images and caption information at www.Contribute.Kalmbach.com, or send prints or CD-ROMs to *FineScale Modeler*, Reader Gallery, 21027 Crossroads Circle, P.O. Box 1612, Waukesha, WI 53187-1612. We prefer unedited images in RAW format.

About those captions: Please provide us with the essential descriptive information, including the manufacturer, model, scale, modifications, paint used, and reason for choosing the model, along with your name, hometown, and address. We look forward to seeing your work!

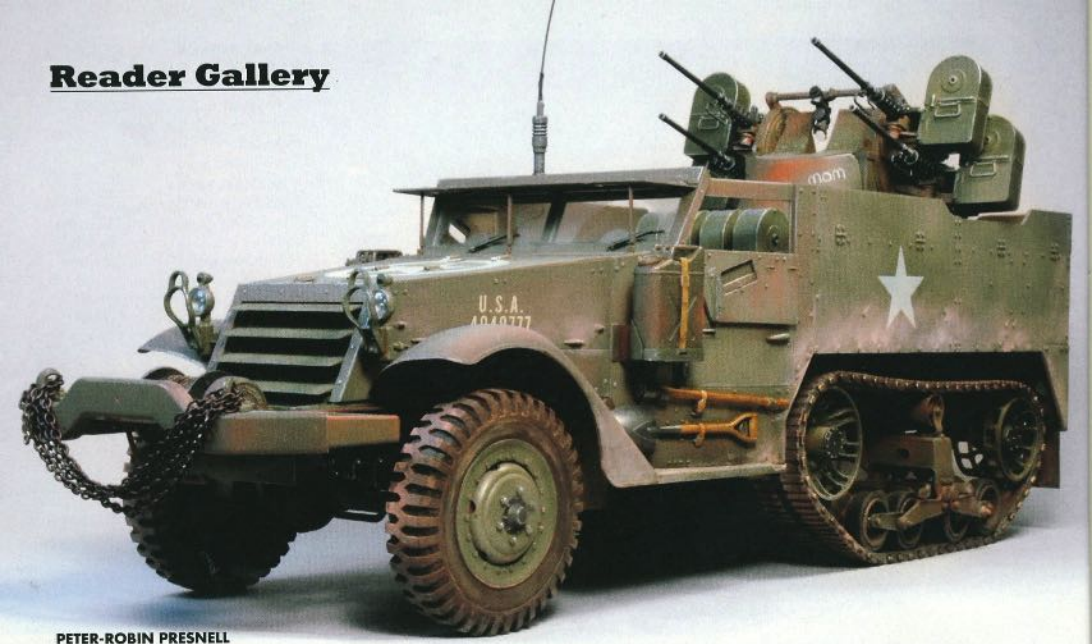


◀ CARL HEINECK
HOBE SOUND, FLORIDA
Using more than 60 reference photos of the liberty ship SS *Jeremiah O'Brien* in San Francisco, Carl detailed Bluejacket's 1/192 scale kit.

▼ MICHAEL SCOTT
FOLSOM, CALIFORNIA
"This is a Wingnut Wings 1/32 scale Junkers J.1 built with only minor additions to the engine," Michael says. He wired the ignition with small-gauge solder colored with a black marker and run from holes in both distributors. The heat shield is made from styrene sheet and super glued to the plugs. Michael dabbed the ends with acrylic brass paint for attachment clips. "Parts fit is so good the landing gear is pressed into the wing but not glued."

◀ STEPHEN WILDER
SAGINAW, MICHIGAN
Stephen built Revell Germany's MAN 7t mil gl 6 x 6 cargo truck, adding Eduard photoetched-metal details and several scratchbuilt items. He painted with Polly Scale NATO colors and weathered with airbrushed acrylics, washes, and AIM Products powders.

Reader Gallery



PETER-ROBIN PRESNELL
KNEELAND, CALIFORNIA
"My wife was home when the box arrived via UPS, and I instantly had a lot of explaining to do," Peter-Robin says of Trumpeter's hefty 1/16 scale M16 Multiple Gun Motor Carriage. He primed several parts with RAF dull red and overpainted with Testors Model Master olive drab and faded olive drab enamels, letting the primer show through in places. He base-coated other steel items (such as leaf springs) with Model Master steel, overcoated with gun barrel black, then, before the black was dry, rubbed wear points using a cotton swab damp with Turpenoid to expose the "steel" beneath.

▲ **ANDRE SILVA**
FUNCHAL, MADEIRA ISLAND, PORTUGAL
After much research on this Type 69-II from Iraq's 3rd (Saladin) Armored Division around Basra in 1987, Andre settled on Tamiya buff (XF-57) and field gray (XF-65) acrylic paints for the camouflage. He added fuel-tank plumbing and a few scratchbuilt details to Trumpeter's 1/35 scale kit.

▶ **ERIC NELSON**
RIVERSIDE, CALIFORNIA
Eric built a display base for B9, the robot from the 1960s TV show "Lost in Space," which he says was his favorite at the time. He painted the Polar Lights 1/12 scale model with Krylon dull aluminum.

▲ SERGIO CALETI
MEXICO CITY, MEXICO
"This is my first decent tank," says Sergio, who did indeed make a fine build of Tamiya's 1/35 scale T-55.

◀ PEDRO MORAES
CAMPINAS CITY, BRAZIL
To model a Varig MD-11, Pedro dressed Hasegawa's 1/200 scale airliner in automotive paint and applied decals from Brazilian decal maker FCM. "I built it as a tribute to one of the most important commercial carriers in Brazil," he says, a tip of the cap to Brazil's first airline, "and because, in my opinion, the MD-11 is one of the most beautiful airplanes ever made."

JOHN SHOWN
SEYMOUR, INDIANA
John built Italeri's 1/35 scale SdKfz 234/1 straight from the box and finished it with Tamiya paints and Mig pigments.

Simulate a WOOD FINISH

Give plastic parts a wood grain with simple painting

BY RAFE MORRISSEY

Rafe simulated wood on the floor, chairs, and table in this diorama.

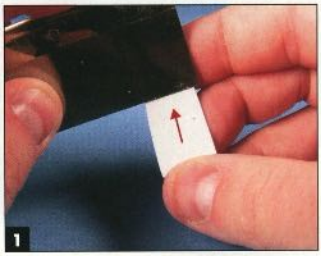
Many modelers think there is little need for simulating wood on plastic models. But think about it for a few minutes and you'll find many instances in which a convincing wood finish could come in handy. Whether it's map tables and ammo boxes on World War II bombers, wood propellers on biplanes, crates and tool handles on tanks, furniture for diorama accessories, or a wood-grained dashboard in a fancy car, many details call for a wood finish.

Some modelers choose real wood for such items. I prefer to stick with plastic. The right combination of painting techniques can make plastic parts difficult to distinguish from real wood.

Preparing the parts

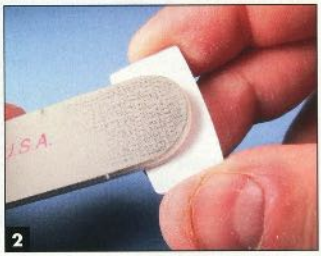
Monogram's 1/48 scale B-17G includes a nice table for the navigator's compartment. The part has molded-in wood grain that will enhance my simulated finish nicely. However, if the part you're using does not have the molded wood grain, it is easy to create

First, scrape a razor saw across the surface. Rather than going straight across, move the saw from side to side to get a naturally wavy texture, **1**. Next, use a fine-grade sanding stick to knock off the burrs, **2**. After a quick scrub with a damp toothbrush, the part is ready for paint, **3**. (Note: To make the grain visible in the photo, I rubbed powdered graphite into it.)



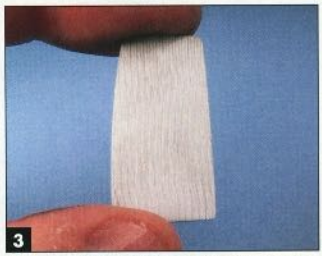
1

To give smooth plastic pieces wood grain, Rafe starts by dragging a razor saw across the surface.



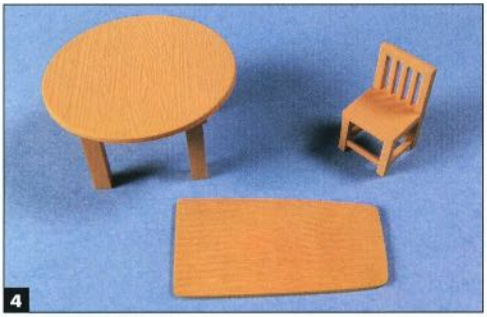
2

A fine sanding stick removes burrs left by the razor saw.

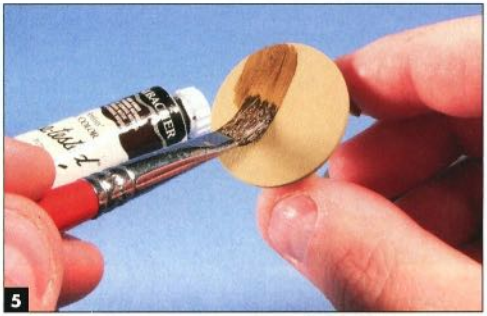


3

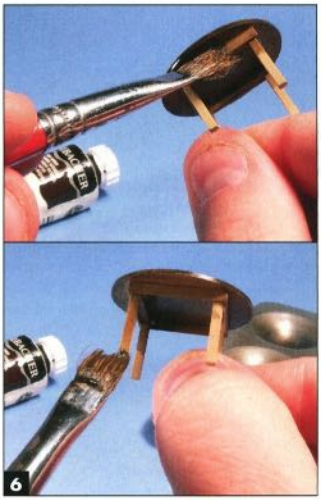
After a quick scrub with a damp toothbrush, the piece is ready for paint. Rafe rubbed powdered graphite into the grain to show the wavy pattern he produced with his razor saw.



Rafe paints several base coats to make sure he won't rub through the finish in the next steps.



Rafe uses a brush with a jagged edge to apply a faux grain painted with thinned raw umber artist's oils.



To create variety, Rafe changes the direction of his strokes on the same object. On the table, for example, he painted the base and the legs at a 90-degree angle to replicate separate pieces.

Plastic pieces transformed to "wood": Burnt sienna artist's oils on the chair created a different wood finish compared with the table and its veneer of raw umber artist's oils.

After the parts are assembled and the wood grain texture added, it's time to lay down a tan base coat. I used Tamiya deck tan (XF-55). It is important to use an acrylic paint for this step because subsequent detailing will be done with oil paints. (These would soften an enamel undercoat.) I lay on several coats because I don't want to risk rubbing through the finish in the next steps, **4**.

Creating wood grain

Since acrylic paint will resist the oils, you don't have to wait until the base coat is completely cured to begin the next step. Just be sure the parts are dry enough to handle. I use a selection of artist's oils, thinner, and a brush. While most brushes will work, try to find one with a bit of a jagged edge. This will help produce random streaks.

First, apply a thinned coat of artist's oils, **5**. (I'm using raw umber here.) Thin the oil to the consistency of enamel paint. Once the part is covered, clean the brush and begin to work off some of the oil in the direction of the grain. Don't lift the brush until you reach the end of the part.

Wherever possible, vary the direction of the strokes on distinct parts of the object. For example, I painted the grain in the table base and the legs at a 90-degree angle, **6**. The depth and intensity of the wood grain is your choice. You can add paint and keep removing it until you're satisfied.

Adding variety

Experiment with different oil colors for different types of wood, **7**. For the chair, I used burnt sienna to simulate a cherry finish. I also used a smaller brush so I could vary the direction of the strokes between the seat, legs, and seatback. Yellow ochre can simulate unpainted pine. (Use a very light tan for the base coat so the undercoat is not visible through the yellow.)

The finished parts look like real wood to me, and they're a nice contrast to other painted surfaces. I'm looking forward to trying this technique on the fuselage of a World War I Albatros biplane! **FSM**

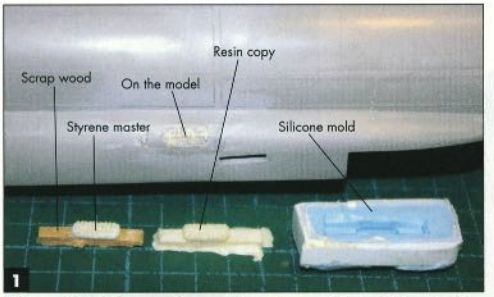
Improving Monogram's F-101B

John built Monogram's 1/48 scale F-101B better by overcoming a few fit problems and adding aftermarket and scratch-built details.

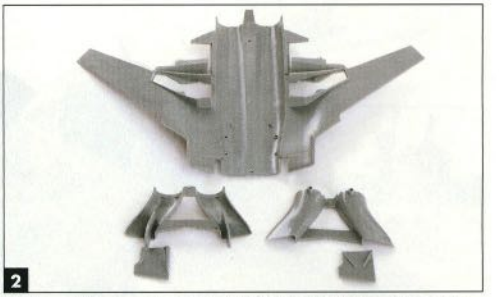
How you too can do a Voodoo so well

BY JOHN EATON

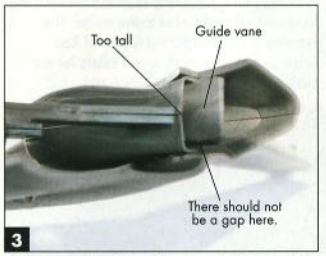
I am a volunteer "crew chief" on an F-101B at the Aerospace Museum of California outside of Sacramento, so I have a special interest in the aircraft. As part of plans to refinish the plane in the markings it wore in March 1965 with the 2nd Fighter Interceptor Squadron, 52nd Fighter Group, at Suffolk County Airport, N.Y., I wanted to build Monogram's 1/48 scale Voodoo to show how the full-size fighter would look. Ron Easley, the other volunteer crew chief, did extensive research on the aircraft's markings with the 2nd FIS.



After scratchbuilding an oblong vent from styrene, John cast it in resin, then installed it in the model's wing root.

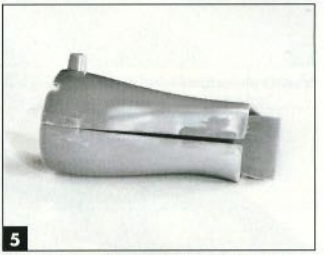


The biggest fit issue on the Voodoo is the intake and wing root assembly. There are a lot of parts that have to fit together just right.



The source of the fit problem is not the wing but the intake trunks. They are too tall, pushing the wing halves apart and preventing the guide vane from fitting flush.

The same fit problem creates a step under the fuselage if it's not corrected.



The solution: John separated the intakes and sanded the inner edges of the trunk halves so he could push the wing halves closer together.

Be careful installing the inboard wheel-well bulkheads, John says. If they are too far inboard, they will interfere with the wing-to-fuselage fit.

For a solid wing, John started gluing the wings together along the leading edge.

John used clamps to ensure a tight fit of the wing assembly.

Combine kit with details

The Monogram kit captures the Voodoo's shape very well, and features lots of accurately molded detail. But technology has moved forward since the kit hit shelves in the mid-1980s. I spruced up the model with photoetched metal from Eduard and a resin avionics bay from Legend.

The kit's raised panel lines are out of vogue, but didn't bother me enough to rescribe the model. I preferred to mute the lines by sanding them down a little. I like panel lines to appear as an interruption in the flow of light over the surface — just enough to notice, no more. This is especially true of the F-101B, which always had a gloss finish in Air Defense Command service.

Vents and intakes

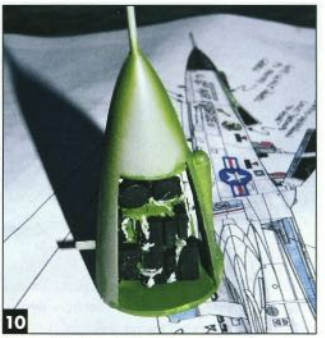
There are a few details in the Monogram kit that need a little attention. It was necessary for peace of mind to correct the shape of a vent on the right upper wing root. It should be rectangular, not round as Monogram molded it. A master was made from plastic card, then attached to a scrap of wood and copied with a silicone mold. I made a resin copy and attached it to the model through a new hole, **1**. The old vent was filled and sanded smooth.

Several parts make up the inlets, **2**, and a lot of reviews noted difficulty fitting the wing to the fuselage. After dry-fitting, I determined that the cause of the fit problem is not the wings but the inlets. They are too tall, causing the splitter plates, intake guide vanes, and upper wing roots to fit poorly, **3**. This, in turn, creates a step where the lower and upper wings meet, **4**.

I separated the intake ducts by removing the styrene bars between them, then sanded

9

Eduard's photoetched-metal details, including instrument panels, really spiffed up the Voodoo's cockpit.



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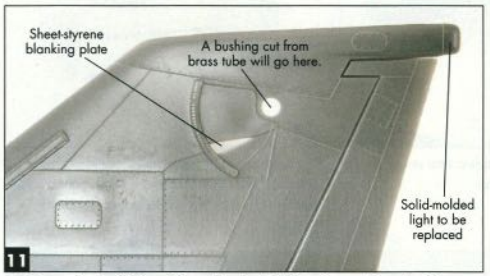
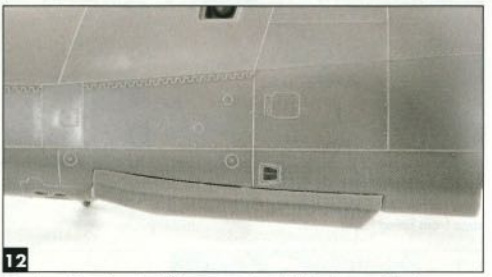
John installed and painted Legend's avionics bay before attaching the nose to the model. The drawing in the background is part of Ron Easley's research on the correct colors for the model as well as the museum's F-101.



11

On the vertical stabilizer, John added a blanking plate, a brass bushing to better support the horizontal stabs, and a clear-styrene replacement for the tail nav light.



12

"Don't work too hard to fill the seam above the fuselage strake. It was attached on top of the fuselage skin," John says. "You will have to do some filling on the inside front."

the inner walls using the splitter plate as a guide for how much material to remove, **5**. I left the aft end as it was so the kit engine faces would fit. I saw no need for the connecting bars, as the alignment of the inlets is determined by the fit to the wing halves.

Wings and gear bays

I installed the inboard walls (parts 37 and 38) in the main gear bay carefully to ensure they didn't extend past the edge of the upper wing and interfere with the wing-to-fuselage fit, **6**. Eduard photoetched metal added detail and interest to the bays, but I left off Eduard parts 22 and 23 until after I had installed the kit's main gear actuators (parts 36 and 95).

After filling, sanding, and painting the intakes, I attached them to the lower wing, filling and sanding gaps.

I started gluing the upper wing in place by applying glue along the leading-edge slat under the wing, **7**. Little or no seam work was needed here. Next, I glued the rest of the wing perimeter, except for the seam inside the flap bays, to allow adjustments when joining the wings and fuselage. I had previously thinned the plastic at the trailing edge of the wing root to eliminate a gap and produce a finer trailing edge.

I used clamps to ensure tight fits in the flap bays, **8**.

Cockpit

I spent a fair bit of time looking through a magnifying glass while painting the cockpit detail and, with lots of wiring, switches, and actuators, it looks like the inside of the museum's F-101. The Eduard photoetched-metal instrument panels make an outstanding addition, **9**.

Legend's avionics bay is quite accurate. I added bottom and forward bulkheads, and replaced the rear bulkhead because it didn't fit, **10**. The set includes detailed doors that I posed open with styrene-rod stays.

I built the nose as a subassembly, fitting it to the fuselage after detail painting. I added weight to the nose cone, although it might not have been necessary.

Fuselage

The fuselage went together without problems, but I added sheet styrene behind the pie-piece-shaped hole in the vertical tail to blank it off, **11**. The formation (slime) lights shouldn't extend above the skin as the on the kit, so I sanded them down some.

I attached the strakes to the missile door under the fuselage, but didn't worry about blending it into the body, **12**. On the real aircraft, these strakes were added to the airframe, not built as part of it. I sanded off the vertical tail's navigation light and replaced it with clear acrylic.

To position the stabilators, I drilled holes where the locators had been on the horizontal tails. Next, I super glued a steel pin bent to the angle of the dihedral into one stabilator, then glued a bushing — a short piece of K&S brass tube — into the location hole in the vertical stabilizer to provide a tight fit for the stabilators.

After test-fitting, I set the stabilator assembly aside for painting. Once the model was painted, I fed the steel pin in the

To properly display the Voodoo, John had James Steel build a base to look like a Cold War-era alert pad. The details come from a variety of sources, including parts from Revell's late-1950's vintage F-102A kit.

Meet John Eaton

A CALIFORNIA NATIVE, John is retired from professional flying as well as farming and water-well drilling. He built his first crop duster out of Tinkertoys around age 4 and has been modeling airplanes in one form or another since then. When John isn't building models or talking about them on the Internet, he's probably flying and photographing radio-control airplanes — that is, if he and his wife Donna are not busy having fun playing with their grandchildren.

one stabilator through the bushing and inserted it in the other stabilator.

I removed a little plastic from both ends of the rotating missile door so the added photoetched-metal detail did not interfere with the fit. I used kit parts and sheet styrene on the inside of the missile bay door, because the photoetched-metal replacements were too thin to be convincing.

The burner-can halves don't fit well; I forced the worst of the seam to the inside where it can't be seen. Don't worry about eliminating the outside seam entirely, as there is a weld seam on the cans in that location. Note: There is a stainless ring on the fuselage where the burners attach.

Gear bays

I left the nose strut and actuator off when I assembled the nose gear bay to avoid accidents during handling. But I won't do that on the next Voodoo I build; the fragile actuator parts are very difficult to fit after the model is built. Sometimes it is better to follow the instructions.

The main gear struts attach to shallow depressions in the upper wings, but I had trouble fitting the actuators. I had to bend them relative to the inboard bulkhead.

Finishing

I airbrushed the Voodoo with Model Master ADC gray enamel, then painted details such as the red flap interiors, black radome, green anti-glare panel, and white intakes with Tamiya acrylics. The blue trim is household spray paint.

Based on research by fellow museum volunteer Ron Easley, I designed the 2nd Fighter Interceptor Squadron, 52nd Fighter Group decals in Corel Draw and AutoCAD 2002, then printed them on Tango Papa decal paper with an ALPS printer. Additional markings from the kit and a Bare-Metal Foil sheet fleshed out the finish.

Decal strips replicate canopy sealant. I left the canopy unattached for transport and replaced the plastic pitot tube with brass tubing and a steel pin for durability.

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McDonnell F-101B/F: Aerofax Minigraph 5, Kevin Keaveney, Aerofax, ISBN 978-0-942548-10-5

McDonnell F-88/F-101 Voodoo Variant Briefing, Robert F. Dorr, *Wings of Fame Vol. 1*, AIRtime, ISBN 978-1-874023-68-5

F-101 Voodoo — Modern Military Aircraft Series, Lou Drendel and Paul Stevens, Squadron/Signal, ISBN 978-0-89747-162-6

SOURCES

Photoetched-metal details, Eduard (No. 48394), 420-47-611-8259, www.eduard.cz

Resin avionics, Legend Productions (No. LF4032), www.www-legend.co.kr, available from Squadron Mail Order, 877-414-0434, www.squadron.com

Decal paper, Tango Papa, 484-767-8731, www.tangopapadecals.com

This was an enjoyable build for many reasons. But the best moment was when I sent photos of the finished model to Ron, then serving in Afghanistan. He thought it was excellent, and I could tell that it gave Ron a lift to see his old friend rendered in three dimensions in her new clothes. **FSM**

Scratchbuilding a BRIDGE-LAYER

Combining thorough research and detailed construction to build the model you want

BY ROBERT FOSTER

Robert used Dragon's 1/35 scale PzKpfw IV Ausf C as the basis for his dramatic scratchbuilding project.

So, my Mother looks at my latest modeling project and shakes her head. "I've always said you should have been a brain surgeon."

Yeah, right! Like I don't have enough pressure just trying to get a piece of photo-etch glued on straight. Now she wants to put the life of someone else in my hands. I don't think so!

To a great many modelers, scratchbuilding seems nearly as impossible as brain surgery. From my limited perspective, I can now attest that scratchbuilding is not voodoo or witchcraft. Scratchbuilding is a skill, like painting or sanding, and like any skill, it needs to be learned and practiced. So where should a modeler start?

The project and research

For me, scratchbuilding had always been a goal and one that seemed very far away. Having returned to modeling in 2003 after a 20-year absence, I certainly didn't think I had the requisite skills to attempt a large-scale project. My experience was probably similar to many of you. I had scratched together some minor components, like brackets and boxes, but nothing complex. In August 2006, I decided to take the plunge and try a fairly significant scratchbuilt project – converting the 1/35 scale Dragon PzKpfw IV Ausf C into a Brükenleger IVc bridge-laying tank.

I selected this subject for several reasons. I was interested in the design, but I'd never seen a model of one in any scale. The design has very few curved components and no complex curves at all. These would have required more advanced scratchbuilding techniques like vacuum-forming. All things considered, this was definitely a project I thought I could attempt.

There were a few obstacles to overcome. I quickly discovered my available references for this vehicle were limited to a single side-view line drawing in 1/48 scale and only a handful of period photos. Some areas of the bridge-layer had no photographic coverage and would require creative engineering. I blew up the 1/48 line drawings to 1/35 scale and these would serve as my pri-

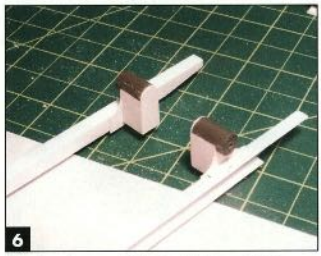
Robert filled the vehicle's hull with Sculptamold to help offset the weight of the extended bridge.

Clamping two identical pieces together during scratchbuilding cuts the work time in half.

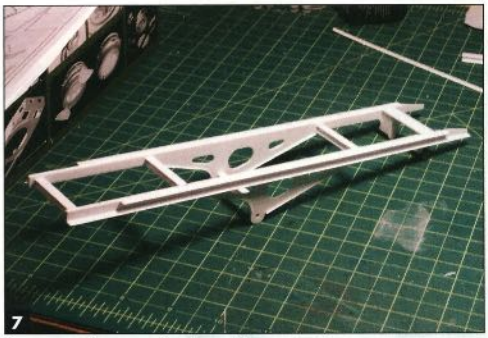
The finished identical carriage side plates.

Here's an exploded view of the unassembled pivot parts Robert made.

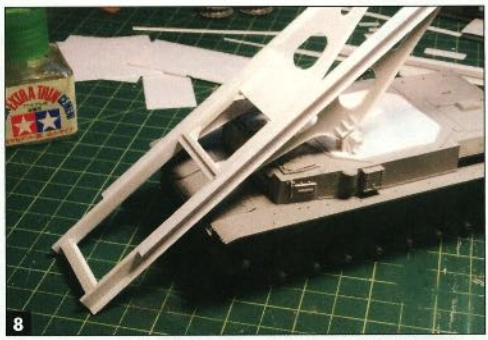
The rear ends of the guide rails mirror each other. Here they're separated by an unmodified piece of "U" stock.



Here's a close-up of the identical rear winch points installed on the guide rails.



The carriage begins to take shape with cross bracing.



Robert checks the carriage's alignment with the assembly tilted forward.

mary reference for most measurements. Some measurements would have to be extrapolated from photos.

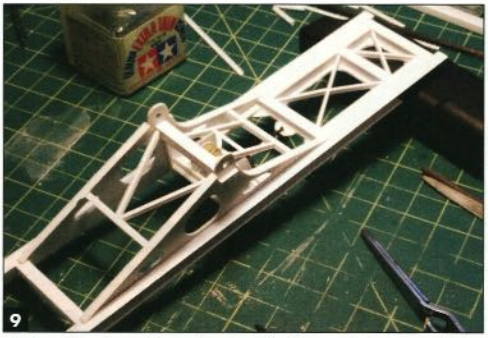
The last consideration before I began was to decide exactly what type of model I wanted to construct. I could build the project as a "static model" (with no moving parts) and it would make a fine display piece. However, since this was my first scratchbuilding attempt, I threw caution to the wind and jumped in with both feet. After all, if you're going to shoot for the stars, why not go all the way? I decided to build the bridge-layer with not one, but two bridge elements (one for the tank to transport and one for the tank to sit on) *and* to have all the components work. This way, the vehicle could be displayed in the "transportation configuration" or in the "bridge deployment configuration". (What in the world was I getting myself into?)

Construction

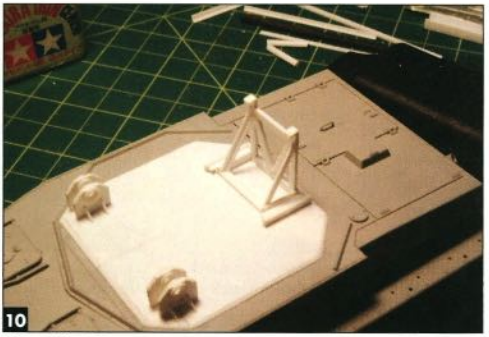
There are four major assemblies involved in this project:

1) The carriage. This attaches to the upper hull and carries a bridge section.
2) The bridge. The project as I planned it would need two of these.
3) Front hull support. This stabilizes the bridge during transport and prevents the tank from flipping forward during bridge deployment.
4) Rear winching assemblies. These raise and lower the carriage.

I won't go into the construction of the Dragon chassis (since this is a scratchbuilding article) other than to comment on the amount of ballast I put in the hull before locking it up. I used enough Sculptamold and pea gravel to completely fill the lower hull and believe it or not, it still wasn't quite enough…lesson learned, **1**.

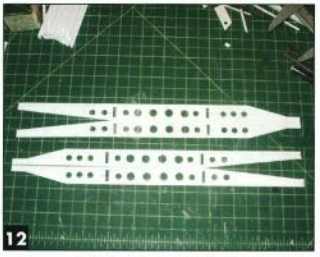


Additional bracing and internal structure slowly gives the carriage a heftier appearance.

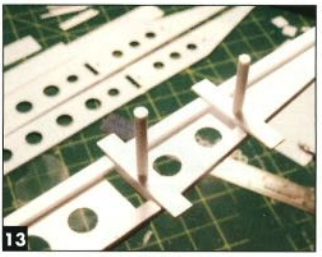


After sealing the turret opening, pivot mounts and a hold down bracket are installed on the upper hull.

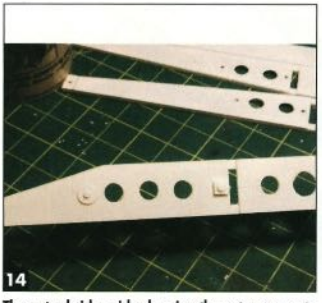
The bridge side plates with their drilled details complete.



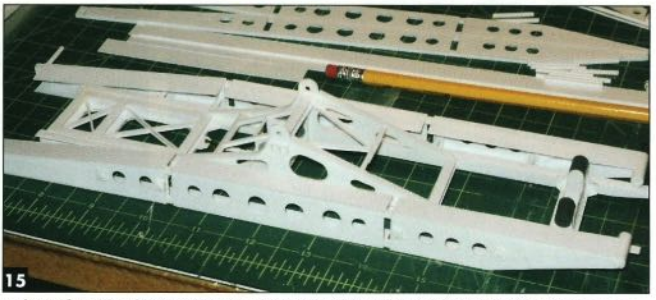
Robert wanted two separate bridge assemblies, so he had to assemble four identical sides.



The interior of a bridge side with its axles installed.



The outer bridge side showing the extra support Robert added around each axle.



Each set of completed bridge sides was checked for alignment and fit by sliding the carriage assembly onto the axles.

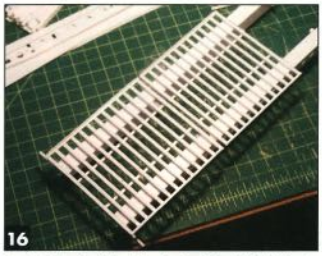
The carriage

The design of the transport carriage on the bridge-layer appears fairly simple. There are two main side supports that attach to the lower hull, two massive "U" channels on which the bridge sections slide, and cross bracing between the two sides. There are no clear reference photos for the area between the two side supports and I took a great deal of "artistic license" filling this void.

I began by roughing out two pieces of .040" sheet styrene and then firmly clamping them together along with a tracing of the support from my drawings, **2**. I removed the excess material from the edges with a sprue cutter then the cut off the remainder with my rotary grinder. I drilled a small pilot hole for the main pivot, drilled a couple "starter" holes in each support cutout, and then finished the cutouts again with the rotary grinder. Once the styrene dust had settled, I was left with two symmetrical side supports, **3**. These two components were by far the most complex pieces in the entire build.

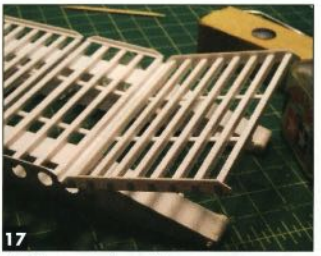
The next step was to build the hull mounts for these side supports. I used a combination of stock tube styrene for the washers, .030" styrene for the mounting plates, 3/32" rod for the pivot bolts, and 1/8" hex stock for the bolt heads. Like many parts of the build, these pivot points would remain fully functional, **4**.

Construction of the main guide rails came next. I used stock .250"-wide "U" channel for the two guides in which each bridge slides on and off the carriage. These channels were 11.75" long and required only a slight modification to the rear, **5**,



16

The bridge decking slowly starts to fill in. Robert used spacers to keep dimensions consistent.

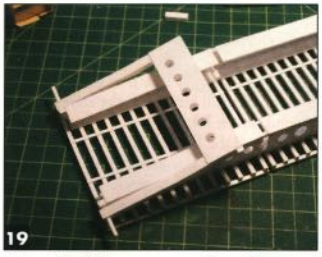


17

The hinges actually work!

18

Assembly of each bridge's front support began with two legs made from hollow square stock.



19

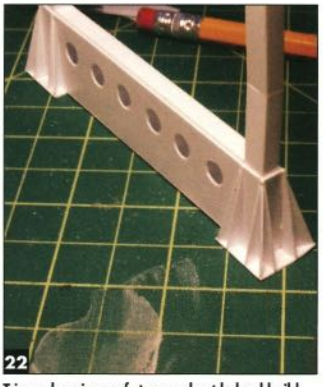
Robert joined the outer support legs with two drilled-out sheet-styrene plates.

20

Here's the same assembly in its down-and-locked position.

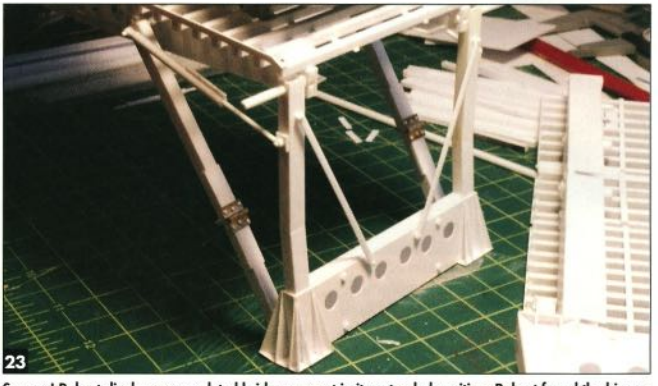
21

Two fully functional tubular dampeners were needed for each bridge assembly.



22

Triangular pieces of styrene sheet helped build up the feet on the bridge support.



23

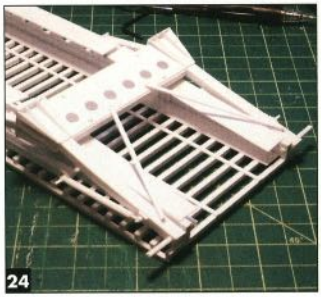
Success! Robert displays a completed bridge support in its extended position. Robert found the hinges in the dollhouse section of his hobby shop; they're the only non-plastic parts on the model.

and front of each rail. Once these were complete, I clamped the two side plates together, lined up the rails on each support's outside upper edge and glued them into place.

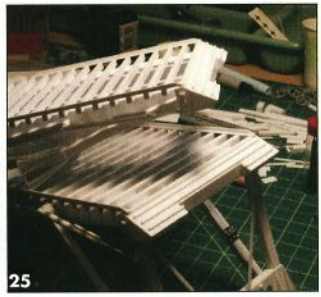
At this point, I decided to build the rear winch points on each rail. These were constructed from two Tiger I exhaust parts (from my spares bin) and .020" styrene, **6**. This is when I made my first major mistake on the build. While these two parts turned out OK, when the carriage and bridges were complete I realized the brackets should have been about a ½" farther below the rail centerlines and located about a ½" farther forward on each rail. In the end, they worked as built, and that's the most important thing.

Before I could glue the side supports together, I needed to take several measurements on the lower hull to determine exactly how far apart these assemblies needed to be in order to fit properly when pivoted forward and back. Since the carriage needed to fit between the front fenders, I simply subtracted ¼" from this width, and cut interior braces using 3⁄16" "H" beam stock to the desired width. I then glued the two side supports together with four of these braces and a support plate above the rear winch points, **7**.

After dry-fitting the pivot-mount parts on each support, I positioned the carriage on the lower hull and glued the mounts in position. I repeatedly checked that the carriage was centered side-to-side on the lower hull and also moved properly forward and back, **8**. The dry-fit pivot pin and washers were then removed and I began



Here's the massive bridge support in its folded position. Constant test-fitting kept all the moving parts working properly.



Front exit ramps, which Robert made from sheet styrene, were the finishing touch of the assembly.

Each bridge-layer needed a large front brace to prevent the vehicle from tipping forward during bridge deployment.

The completed bridge-layer before paint.

building up the interior structures of the carriage. Since there are no clear photos of these assemblies (at least none I could find) these structures were "educated fabrications" and are probably nothing like those seen on an actual bridge-layer, **9**.

The last component built for the carriage assembly was a transportation support. I built the simple brace from various sizes and shapes of styrene stock, **10**. As always, I double-checked each part to ensure it would function as designed on the attached carriage.

The bridges

Construction of the bridges was fairly straightforward. There are only four main components on each bridge – the sides, the deck, the ramps, and the massive front support legs. The first step was to cut .020" styrene into the 12 pieces necessary for each bridge. Each side assembly has a front, middle, and rear. Dimensional consistency was key.

Working with styrene sheet is quite simple, and the principles for cutting it are the same regardless of the thickness. I use a good, metal engineering straightedge and a new No. 11 blade. I run the blade along the cut line lightly a couple of times, then increase pressure until it cuts through. The light score mark helps to keep the blade from wandering. Thin styrene sheet (like .010") will cut after only a couple of passes. Thicker sheet may need five or six passes. With sheet that's .050" or thicker, I generally score the cut line three or four times then snap the stock to finish the break. A little light sanding takes care the edges.

Each side plate needed holes, and I drilled all of them by hand, using progressively larger drill bits. I should add a word of warning here: Thin styrene sheet can tear easily when drilled with a motor tool. I had to replace one of my first side pieces because the drill bit ripped the styrene beyond repair, **11**.

Once all the holes were complete, each set of side plates was joined with interior bracing made from bar stock. The key was making sure the four sides were square and mirror images of each other, **12**.

Each side needed four main axles (for lack of a better term) to serve as main support for the bridge when mounted on the transporter. I drilled holes through the side plates and inserted axles before further strengthening them with additional parts on the inside and outside, **13**, **14**. Because these components needed to slide freely in the "U" channels on the carriage assembly, all four axles had to be perfectly aligned from front to rear on each side assembly. After adding some additional .020" styrene sheet to the top and bottom of each side plate, all that remained was to ensure they properly rested in the main carriage "U" channels and everything lined up. I simply turned the carriage and side assemblies upside down to test the fit, **15**.

With the sides complete, I turned my attention to the bridge decking. Each bridge has a separate front, middle, and rear deck section. To build all this decking, I needed 36 pieces of 2.5mm x 3.2mm Plastruct stock and one piece of 3.2mm square stock cut into 3.75" lengths. After determining the proper spacing between each bar on the deck, I lined them up using spacers and glued them. I added angle stock to the outside edge of the bars before the front and middle sections of decking were glued into place on the top of the side assemblies, **16**. The rear section of the decking is actually two parts; one fixed and one hinged. After the fixed section was attached, I built four hinges using round and tube stock. The center of each hinge was glued to the side assembly, while the two outer pieces of each hinge were glued

Robert applied a standard German gray scheme and minimal weathering to his Brükenleger IVc.

to the rearmost section of decking. This resulted in a rear ramp that raises and lowers just like on the actual vehicle, **17**.

Construction progressed to the large front support legs. After inserting a large pivot pin on each side, I built two legs out of hollow rectangular stock and drilled a pivot hole in each one, **18**. I joined the two legs with a front and rear plate made from .020" styrene sheet, **19**.

This next step in construction was by far the most difficult in the entire project. Each front support needed to have foldable legs. Building these took a lot of trial and error, Determining the proper lengths for the upper and lower sections of each leg, the arcs of movement, and the attachment points was extremely time-consuming. In the end, I managed to construct four supports that fold and extend freely, **20**. The small hinges on each leg are metal dollhouse door hinges.

The final elements in completing these front supports included building four working dampeners, **21**, building up the "feet" on each side of the front support, **22**, adding additional support parts to the assembly, **23**, and then ensuring everything continued to move properly, **24**. The last step was to build front exit ramps, which I made from styrene sheet, **25**.

Front and rear hull modifications

With the main transportation carriage and each bridge complete, I was finally seeing the finish line. The only remaining tasks were to build a working support on the front of the tank and build the winching assemblies on the rear of the tank.

The front support was built using styrene sheet, round and square stock, and a couple of pivot pins. This support keeps the front of the vehicle from tipping forward when a bridge is being deployed, **26**. Based on the best side-view photos, I used some spare parts and ship-building rope to build the winches.

I attached the carriage assembly to the lower hull and my scratchbuilding project was complete, **27**!

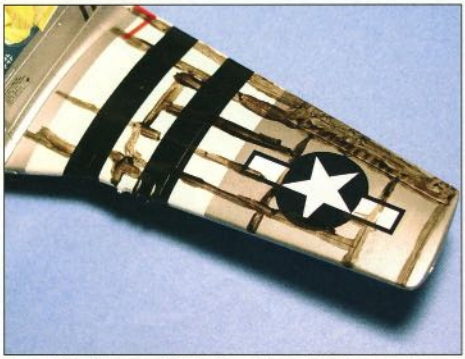
In the end, the model turned out far better than I expected, but to be honest, it's certainly not a totally accurate representation. There are far too many places where I simply guessed at design features. However, it does look very close to a real vehicle from across the room, and that's fine with me.

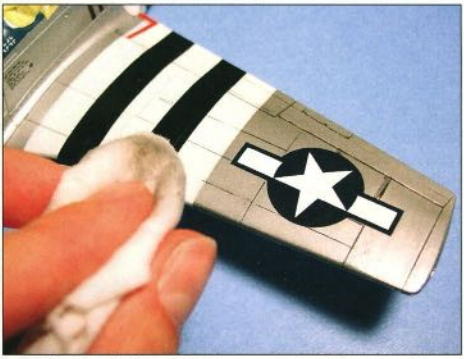
I hope some of you will be inspired to "take a chance" with scratchbuilding, even if you're only considering starting with a small project. You might just discover you can do far more than you ever thought…I sure did! **FSM**

Questions & Answers

A clinic for your modeling problems

By Mark Hembree





Mark Büchler's February 2005 *FSM* article described how to use Tempera poster paints for a dark wash that's easy to apply and correct or alter. If you'd like to see the entire article, you can order back issues at FineScale.com or by calling customer service at 800-533-6644.

Watercolors for modeling?

Q I just found some of my old watercolor paints in my desk and was wondering: Could they be used for anything to do with scale modeling, like washes, filters, etc.?

– Alex Flatman, Victoria, B.C., Canada

A Yes, you can use watercolors for washes — probably best over enamels, but you could go over acrylic paint with them, too; they're kind to undercoats. We had an article on using Tempera paints for this in the February 2005 *FSM*; it also was reprinted in our first edition of *How to Paint & Weather Scale Models*.

It's pretty simple: Apply the paint; let it dry; then use a damp (not soaking wet), soft cloth to wipe way as much of the paint as you like, leaving the dark color in panel lines and other recesses to give depth to details. You can also use watercolors to tint groundwork or water on a display base.

How thin can you go?

Q How much is too much when it comes to thinning acrylic paints? Will there be adhesion problems if I thin the paint too much?

– John Polacchi
Santa Rosa, Cal.

A I've heard of people doing general painting with 60 percent thinner/40 percent paint, and even thinner for certain applications. Depends on the brand and sometimes the color, but thinness shouldn't hurt adhesion. In fact, several thin coats is better than one or two thick ones.

Decals should stick

Q What is the best way to keep decals from drying out and peeling off the model? What is the purpose of spraying Pledge Future floor polish on models?

– Aubrey Liles
Casa Grande, Ariz.

A There are a lot of variables in decals, both in their composition and in how you apply them. Some decals just don't work well — I can't help you with that. However, if yours are consistently peeling up, you may be soaking them for too long before application, allowing the adhesive to float off them. Try dipping them in water, then laying them on a paper towel until they are ready to slide off the paper.

You may find Future helpful. People use it on flat finishes as a bed for decals, which adhere better to a smooth, glossy surface. Some modelers also use it as a clear coat to seal the decals; it can be a good clear gloss finish, or you can follow with a clear flat if that's the sheen you desire.

Spray Future at full strength — do not dilute it — and wait at least 24 hours (and perhaps, to be careful, 48 hours) before doing anything else to it to make sure the Future is completely dry.

Others use Future simply for coating canopies and other clear parts, which it makes more transparent and brilliant. For that you can dip the part completely in the Future, pull it out, and let it dry in a dust-protective container to keep dust motes off.

Humbrol dragoon green

Q I used to use Humbrol dragoon green for my Napoleonic figures. That paint does not seem to be available anymore. Can you tell me what would be the closest thing to it?

– Michael Bradley
Tonawanda, N.Y.

A An equivalency chart at www.ipmsstockholm.org suggests Humbrol No. 101, called mid-green. Another cross-reference I've seen suggests Tamiya flat green (No. XF-5).

Getting paints in China

Q I will be here in Shanghai for a couple of years, and I'm having a tough time finding paints, kits, and construction materials. Squadron says it can't ship paints and thinners and such to China, and I've yet to find a local source.

– Ed Heresniak
Shanghai, China

A Shipping paints internationally can be a problem. However, there are hobby shops

and online stores in China that carry products we can't get here, such as Gunze Sangyo Mr. Color acrylics, so it cuts both ways. Here's a page of links to help you find sources in China: http://scalemodel.net/asp/viewcountry.aspx?cy=China&pageno=3

Box art aficionado

Q I think I recall a website that had several images of the artwork produced by Dick Locher for Monogram in the 1970s. Are you aware of any more sources? It's not something I find at IPMS shows, I'm afraid.
– Joseph Lambert
Addison, Texas

A Joseph, you might be interested in a couple of Thomas Graham's books published by Schiffer: *Box Top Air Power: The Aviation Art of Model Airplane Boxes* (ISBN 978-0-7643-2964-7) and *Monogram Models* (ISBN 978-0-7643-2481-9). And there is *Flying Can Be Fun*, by Dick Locher and Michael Kilian (Pelican, ISBN 978-0-88289-449-2).

Outside of the scale modeling hobby, Locher is best known as a Pulitzer-Prize-winning editorial cartoonist for the *Chicago Tribune* and an illustrator and writer of the Dick Tracy comic strip.

Old kits, new prices

Q I built a Hasegawa 1/32 scale F-16 a long time ago. At that time, it was considered a premium kit. What is the difference between that kit and today's F-16 kits, which cost almost three times as much?
– Ed Zabel
Piqua, Ohio

A The Hasegawa kit may reflect older standards of molding, whereas newer kits may hold a higher standard of accuracy and molding. They may also contain photoetched-metal details kits didn't contain years ago.

Whether they are worth more money is a question I can't answer. Everyone has different standards in that regard. Not to be a wiseguy, but nobody *has* to model. What people will spend on a hobby differs widely, whether it's models, cars, golf, comic books, musical instruments, etc.

Concertina wire made easy

Q I'm working on a Vietnam-era M113 ACAV and an M2A2 Bradley (Thunder Run, Iraq) and I'd like to put some concertina wire bundles on the models. Is there a quick and cheap way to make the wire?
– Duane Nollen
Oskaloosa, Iowa

A You could buy premade barbed wire made by Verlinden or Eduard, but it's not difficult to make your own.

Choose a wire gauge that looks right for the scale; in 1/35 scale, some people use telephone wire, which is easily available. To me, it might be a little thick — but probably OK if you're going to bundle it up on a vehicle.

All the tools you need for concertina wire are a needle-nose pliers, a wire-stripping pliers (like you'd use for electrical work), and a pen, pencil, or dowel.

YOU COULD BUY PREMADE BARBED WIRE ... BUT IT'S NOT DIFFICULT TO MAKE YOUR OWN.

Strip insulation from the wire and cut a length of it; this will be your core. Now cut several short segments (say, ⅛"–¼") for barbs. Twist the short segment around the core two or three times, then trim the barb to size. It doesn't have to be precise; barbed wire is rough. Repeat at semiregular intervals and you have a strand of barbed wire.

After you've finished attaching the barbs, coil the barbed wire around a pen, pencil, crayon, dowel, whatever. You can bundle this wire with another short segment of wire and there you are — just hang the wire on your vehicle and you're ready to roll off and secure a perimeter.

Here's one more tip. To prevent injury, wrap bandages or tape around your fingertips *before* you puncture them.

Chasing Corvette parts

Q I got a 1/25 scale Revell 2005 Corvette C6, and the kit was missing some metal pieces (the exhaust tubes and axles). Do you have any idea where I could get these?
– Nick Price
Lynden, Wash.

A Nick, your best first bet would be Revell: www.revell.com. After that, register in *Scale Auto* magazine's Forum (it's free): http://cs.scaleautomag.com/scacs/forums. Ask around in the "Where can I find" section. Lots of people have good luck with that.

Italian insignia

Q I have been building Italian aircraft for a friend, but few of the kits actually have Italian insignia. I was wondering, is there was a reason for this, like the German ban on swastikas?
– Chet Mohn
New Cumberland, Pa.

A I'm assuming you mean World War II aircraft. I am not aware of any such restrictions anywhere regarding insignia of the *Regia Aeronautica Italiana*. Have a look around at www.tauromodel.it, an Italian website with plenty of decals; also, take a look at www.insigniamag.com. Those are just two; there are lots more.

Painting vinyl tracks

Q Is there a good way of painting vinyl tracks for armor models?
– Brian Brown
Joplin, Mo.

A Vinyl varies, even with the same kit manufacturer, and some just doesn't take paint well. In those cases, people install the track, then paint it. I've also heard of people precoating the track with Dullcote, super glue, even liquid styrene — but results and remedies can be unpredictable. Here are some things you can try:

- First, wash the tracks thoroughly; you could even soak them in bleach and scrub them to remove any oiliness.
- Try one of the precoats suggested above.
- Don't paint the tracks — instead, weather and wash them with powdered pastels to approximate the color and finish you want.
- Look for aftermarket replacement tracks.

You may find helpful hints in "Making tracks" in the July 2006 issue. Back issues are available at Finescale.com or by calling customer service at 800-533-6644.

Thinning Squadron green putty

Q How can I thin Squadron green putty so it sinks into those nasty seams on aircraft?
– Jordan Li
Milpitas, Calif.

A You can thin it with liquid styrene cement. However, it dries much more quickly. Use smaller batches and apply it fast. **FSM**

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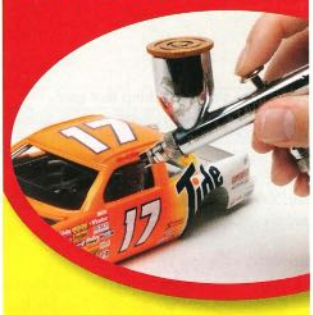

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History You Can Model

By Mark Hembree

Defense Visual Information Center

The versatile OV-10 Bronco served in Vietnam with the U.S. Marines, Air Force, and Navy for reconnaissance, forward air control, and close air support.

North American Aviation/Boeing OV-10 Bronco

Friendly neighbors in a nice suburb like Santa Ana, Calif., might share a cookout, build a fence, or borrow a tool. Not many would get together to create an aircraft for the United States armed forces.

But that's what ex-Marines K.P. Rice and William Beckett did in the early 1960s. Having served together in a Corsair squadron before the Korean War, the former majors often discussed how a new aircraft should be designed for close air support. What eventually took shape in Rice's garage would become the OV-10 Bronco.

Development resulted in a bigger plane built by North American Aviation — but it still looked a lot like the plane Rice and Beckett had in mind, with a high-mounted wing, high-visibility cockpit, and crew of two in tandem seating. The twin-prop aircraft would be faster than a helicopter but slow enough to observe and direct. It would be capable of short takeoffs and landings using primitive fields or even roadways. And it would be an infantryman's best friend, calling in fire when needed, able to assist medical evacuations if necessary.

The OV-10 flew its first missions in Vietnam for the Marines in July 1968. The Air Force started flying them a few weeks later, while the Navy sent them to support "brown water" operations in April 1969.

Broncos weren't just casual observers: Standard armament for the Marines was four 7.62mm machine guns and four rocket pods (two for marking targets, two to shoot at them). They could carry a center-mounted 20mm cannon and as much as 2,400 pounds of rockets, bombs, or missiles.

And Broncos pioneered a new form of forward air control, "painting" targets with a laser for F-4 Phantoms, then the only aircraft in theater with laser-guided ordnance.

Most of the variant designations for the OV-10 were for exported aircraft based on the OV-10A, such as the C (for Thailand), E (for Venezuela), and F (for Indonesia). The OV-10B was produced for Germany as a target tug and featured a clear dome in place of the cargo door aft; another German variation, OV-10B(Z) mounted a J85-GE-4 turbo jet above the fuselage.

The OV-10D represented the Bronco's first major makeover. Developed by the Marines, it featured forward-looking infrared (FLIR) night vision in a ball turret under the nose. Other changes included chaff dispensers (on the booms) and exhaust suppressors to make it less vulnerable to heat-guided missiles. The OV-10D+ also featured strengthened wings.

Boeing, which acquired North American Rockwell in 1996, is working on a new Bronco, currently designated OV-10(X). The plane would be much the same except with a glass cockpit (digital instruments) and "smart" ordnance. The present destination is Afghanistan — where the enemy is as elusive as it was in Vietnam more than 40 years ago. **FSM**

Modeling the Bronco

- 1/48: Hawk/Italeri/Testors (A)
- 1/72: Academy (A, D); Airfix (D); Hasegawa (A, D); Revell (A); Revell Germany (B)

Reader Tips

Solutions and innovations

By Aaron Skinner

Lead-powder safety warning

After reading Pat Maher's tip about using powdered lead to weight aircraft noses in the 2010 *FSM*, I thought it sounded like a great idea. And the stuff is useful.

But lead is dangerous to everyone, especially small children. If you have little ones, I'd advise not even getting this stuff.

If you do use it, take precautions. Use a damp paper towel under the area that you're working on. Use a damp paper towel to wipe down the area afterwards, and do it a couple of times using a new towel each time. Dispose of all towels afterwards; do not use them again. Wipe down the floor, too.

Vacuuming should be done with a HEPA-filter-equipped cleaner, because a regular vacuum cleaner will send lead particles into the air — and that's bad. Wash hands immediately afterwards.

Wash clothes worn during handling separately from other clothing, because the lead is transferable. Just touching anyone else while in contaminated clothing can contaminate them. Stay away from food and drink while you are working with powdered lead.

The Environmental Protection Agency recommends wearing a special mask, latex gloves and disposable coveralls when working with this stuff. Dispose of it all when finished.

Lead poisoning shows up as flu-like symptoms. It can poison small children quickly, and just a small amount can make them very sick and cause brain damage.

It's great stuff, but too dangerous to work with if you have small ones about.

– John Ezzo
Princeton Junction, N.J.

Editor's note: John's absolutely right. It pays to be careful with lead no matter what form it comes in. Wear gloves even when handling lead sinkers or birdshot, just to be safe. – ABS

Sawing thread

An oft-overlooked item on aircraft models is the elevator. More often than not, an aircraft, at rest, has the elevator deflected downwards. Most kits do not offer separate control surfaces, leaving the task of repositioning them to the modeler. Not many elevators have a straight line, which can easily be removed by dragging the backside of an Exacto blade across it. Many require making short cuts at different angles; for these, I use ordinary sewing thread. Take a piece about 2' long, double it over, and tie a loop at one end for your thumb. Wrap the other end around your index finger (not too tight!), and you have a perfect little "saw" for these short, oddly angled cuts. Do not use a lot of pressure when sawing. The thread doesn't cut — it's the friction that heats up the plastic, letting the thread melt its way through.

– Jeremy Backlund
Whitmore Lake, Mich.

Tips for using foil adhesive

In the December 2010 *FSM*, I showed how to re-create natural-metal finishes with kitchen foil. Here's a little more about using Microscale Metal Foil adhesive:

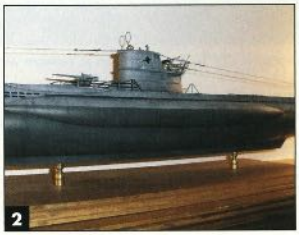
1. I have never found it necessary to thin the Microscale Metal Foil Adhesive. A bottle lasts forever; I foiled two 1/32 scale models with one bottle.

2. Use a ½"-wide soft brush to apply the adhesive directly to the foil. I have not found it necessary to prep the foil unless there is some residue from graining. If there is residue, it can be removed with a soft cloth dipped in isopropyl alcohol.

3. On larger pieces of foil, you can use a Bondo knife to spread the adhesive into a thin, uniform layer. Brush marks and pooling must be eliminated.

4. Apply the foil as soon as the adhesive turns clear. (It is white out of the bottle.) Make sure the model is clean. If adhesive is left to dry before use, it will not flow from

1



2

The lighter side of ship modeling?

Lamp risers are decorative brass hardware used to raise lamp shades and allow more light beneath a lamp. I use them to secure ship models to wooden bases. Risers are threaded ¼" in diameter and 27 threads per inch (¼-27). The bottom is female while the top is male.

During construction, I drill two holes along the centerline of the hull. Then, I secure nuts over the openings. When the model is complete, I screw risers into the nuts. Two holes aligned with the risers are drilled into the base, countersinking room for the bolt heads on the underside, **1**. Bolts are threaded through the base into the female side of the riser and the ship is securely attached its base. I find the scrolled shapes of lamp risers lend a museum quality to any ship model, **2**.

– Ron Pencek
Grapevine, Texas

Decanting Tamiya spray paint for airbrushing

Tamiya has an excellent range of lacquer paints. But they only come in spray cans, which can be hard to control. Using these paints in your airbrush requires you to decant them, and that can be messy.

But look at the button on a Tamiya can and how the nozzle protrudes from the front, **1**.

Get some .170" ID vinyl tubing at a hardware store. You'll find that the tubing fits tightly over the nipple on the nozzle. Next, put a piece of plastic wrap over a paint jar and hold it in place with a rubber band. Poke a hole in the plastic wrap, put the other end of the tubing through the hole, press the button and fill the jar, **2**. I've been using this process for a year now, and I have yet to spill a drop of paint.

From what I've seen, only Tamiya spray cans have this little nipple on the nozzle, so this tubing won't work with other brands of spray paint.

Important safety tip: Do not seal the jar tightly until it sits for a few hours. The paint has propellant gases in it that need to bleed out and disperse. If you seal the jar too soon, you will have paint under pressure, which can be messy at best and a hazard at worst when you open the jar. My usual practice is to leave the plastic wrap on overnight.

– Chip Jean
Yorktown, Va.

under the foil as it should.

5. Smooth the foil starting from the center of the piece and working out toward the edges. Some adhesive will come out from under the foil.

6. A ½", rounded, hard balsa dowel can be used to smooth smaller pieces of foil. You can add detail by tracing panel lines and rivet detail with a toothpick.

7. Remove excess adhesive on the model using isopropyl alcohol on a cotton ball or soft cloth. If the foil has been on the model for more than a week, it is there for good. Until then, it can be lifted and replaced.

– Ken Friend
Statesboro, Ga.

Another paint stirring tip

I saw the recent tip about using a straightened paperclip as a paint stirring tool. I have used the wire hangers dry cleaners use for pants, the ones with the cardboard tube; they're pretty much useless when the cardboard tube is bent. I cut a 3" segment of wire from one end and bend it into a reverse-S. A slight bend in the shaft and it, too, can be twirled between the finger and thumb to stir paints, even when the solvent has become a gooey, gelatinous mass at the bottom of the jar. Bent, it works well in larger jars, such as those used by Tamiya or Model Master. If left straight, it can be coaxed into the Testors square bottle (especially hard to stir paint in).

– Lee Lewis
Roanoke, Va.

Straight pins for Friulmodel tracks

I prefer using straight pins to connect Friulmodel metal track links. I put two links together, then use a mini-drill bit to open the holes between the links. Then I push a pin through the opening until the head is against the track. I find .019"- or .020"-diameter pins produce a snug fit that allows the tracks to move without the pins falling out. Be careful trimming the pins; I hold them inside a trash can so the excess bits don't fly all over the room.

– Mark Copeland
Winamac, Ind.

Easy cleaning tool

Cut a cotton swab in half and chuck it into your motor tool. It's useful for buffing, polishing, and cleaning in small, tight areas.

– Scott Carey
Pasadena, Md.

www.FineScale.com

FSM readers are full of good ideas. For more creative solutions to modeling conundrums, and a database of tips from past issues, visit www.FineScale.com/How To/Tips Database.aspx.

Great Wall Hobby Focke-Wulf 189A-2

The Focke-Wulf 189 Uhu (Owl) reconnaissance aircraft began development in February, 1937, and came to be popularly known as Das Fliegende Auge (the Flying Eye). The aircraft started squadron service in late 1940.

Great Wall's kit, the Fw 189A-2, is an impressive, finely detailed molding of 19 clear and 176 gray plastic parts with fine raised and recessed detail. Extra machine guns and a second clear nose are included but not mentioned in the instructions. The kit provides a standing pilot figure, two engine stands, and two wheel chocks.

Also in the box are a five-color decal sheet and precut masks for the extensive clear areas; the canopy masks are accurately cut and work well. The crew pod with all that glass is amazing; canopy glass can be shown open or closed with no fit problems. However, opening access to the fuselage camera would require some cutting and scratchbuilding.

Although the propellers don't spin, the engine bay and canopy panels can be shown open or closed, the upper turret gun and rear gun positions can be swiveled to any position, all flight control surfaces are movable, and flaps can be shown open or closed. The main tires have flat spots to appear loaded. The tail wheel looks like it's designed to retract, but this would be impractical with the folded photoetched-metal door. The landing gear assemblies go together easily; but they're frail and difficult to install, and the axles are a sloppy fit. The most fragile assembly in the kit is the main gear fenders, which attach to the gear struts with brass fender braces.

I DID NOT HAVE TO RESHAPE ANYTHING

The 12-page assembly instruction booklet comes with an errata sheet and has a parts map, written and symbolic building directions, a masking map, and reasonably clear assembly drawings.

However, there are no interior or detail color instructions, only muddy color and markings illustrations for two aircraft. So, you're on your own to paint the highly detailed crew pod, engine bays, and landing gear and bays. For example, I guessed the bomb racks would be the same as the underwing color and used RLM 65 light blue. Later, I discovered a black-and-white photo that shows the racks were probably semigloss black. Nuts! That same photo shows two-tone bombs. Maybe RLM 71 dark green and black? What's a modeler to do?

The Uhu had lots of glass, and Great Wall provides a heap of detail to fill up the spaces underneath. A cockpit and a rear-gunner's position (right) are provided. Cowl covers can be posed open to display the engines.

The kit goes together pretty much as shown, but it is not necessarily an easy build. The engines and landing gear must be installed as the booms are being assembled; more than two hands are needed.

I still wonder where the bottom ends of parts D28 are supposed to go (Page 7 in the instructions). Study the upper ends of these parts carefully: There are shaped holes in the tops of the wheel bays to receive these parts.

Parts fit is exceptionally tight. While I did not have to reshape anything, I did have to dress some of the edges with sandpaper for proper joins. The outer wing panels are keyed to fit, but as tightly as I could join them to the booms, I was still left with gaps at the inboard edges of the flaps. I filled the gaps with window glazing putty — no sanding.

Part PE10, the center-section flap interior, failed to fit properly due to poor fits in the crew pod/wing center. Pay special attention to the horizontal stabilizer and tail wheel strut: The strut goes into the bottom of the stabilizer from the inside before the upper surface is joined.

I airbrushed my model with out-of-production Floquil military colors, followed by several coats of Testors Model Master clear gloss to prepare for decals. Decals are thin, in-register, and adhere well. They can be removed from the backing paper and moved to position on the model while bathed in water. The decals settled without silvering using Microscale Micro Sol and Micro Set. I finished them with a coat of Model Master clear flat.

Including painting, I spent 52 hours on my Uhu. The box cover recommends the kit to modelers 14 years and older, but those kids will want to have several kits' worth of experience to tackle this complex, challenging kit. The lack of color callouts requires knowledge of German World War II aircraft painting, and the tiny photoetched-metal parts and decal images are nearly impossible to handle.

Still, the moldings, detail, and fit are as good as it gets, and the model scales out perfectly according to my references. It is simply exceptional!

– Allan F. Jones

Kit: No. L4803 **Scale:** 1/48
Manufacturer: Great Wall Hobby, www.lionroar.net, from Dragon Models USA, 626-968-0322, www.dragonmodelsusa.com
Price: $41.95 **Comments:** Injection-molded, 228 parts (33 photoetched metal), decals **Pros:** High level of detail; fine, clean moldings; tight parts fit
Cons: Inadequate color instructions

Dragon 7.5cm PaK 40/4 auf RSO

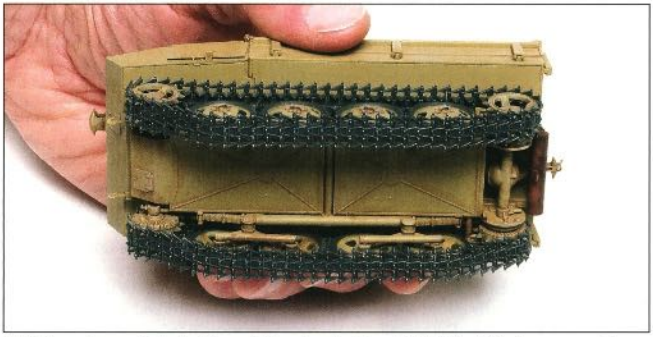
Dragon surprised many modelers with its new 1/35 scale 7.5cm PaK 40 auf RSO. Molded in gray plastic, the kit features individual-link "Magic Tracks," two small sheets of photoetched metal (one for the gun and one for the vehicle), and full drivetrain detail, including a complete engine. A small decal sheet contains markings for three of the seven vehicles shown in the paint guide; the others don't require markings. Unlike Dragon's previously released PaK 40 gun, no turned-metal barrel is provided.

I began with the motor and chassis. Fit was excellent, but the instructions do not show installing the exhaust headers (parts F20 and F21). When assembling the idlers and drive sprockets in Step 2, make sure you use the correct middle part of the sprockets; both options are listed as B18, but they are slightly different. The part closest to the edge of the sprue should be used with the driver assembly (shown in Diagram C). The road-wheel arms (B1, B2) are not numbered on the diagrams; make sure the longer side of both arms is toward the center of the vehicle. The mud-clearing arms for the drive sprockets, parts A5 and A6, suddenly appear in Step 6.

Rather than wait until Step 20, I installed the tracks before attaching the body and bed to the chassis. I glued an upper and lower run of track links for each side, using individual links to fill the gaps on the idler and drive sprocket. Once the glue set, I removed the tracks and painted them off the vehicle.

Assembly of the cab and bed was straightforward with no problems. You can use either photoetched metal or molded plastic parts for the folding doors on the cab. Careful: Tiny pre-bent handles for the doors (parts MB1) are hiding in the bag with the decals and are easily lost or missed.

Kit: No. 6640 **Scale:** 1/35
Manufacturer: Dragon, www.dragon-models.com, from Dragon Models USA, 626-968-0322, www.dragonmodelsusa.com
Price: $57.95 **Comments:** Injection-molded, 498 parts (42 photoetched-metal), decals **Pros:** Excellent fit; detailed motor and interior; good use of photoetched metal **Cons:** Errors in instructions: no folding instructions for some of the photoetched metal, transposed diagrams, some parts mislabeled or missing from the directions



Detail fans will appreciate all of the work in and under Dragon's RSO. The kit features a complete drivetrain, including the suspension, rear axle, and engine.

Italeri U-boot Biber

There is some controversy over the seats provided with the kit; one source claims they are patterned after a restored vehicle that used M113 seats. I attached my seats with white glue so I can change them later if definitive information becomes available.

The bed went together quickly. One of the ammunition storage bins can be posed open if you desire. The only problem was figuring out how the photoetched-metal side latches are folded, especially the ones for the rear gate.

Be wary of the gun. The main trunnions (B26, B27) are shown reversed in the instructions. When assembled correctly, the flat side of the pivot should point to the rear of the gun — not the front, as shown.

My finished model closely matched the dimensions in Chamberlain and Doyle's *Encyclopedia of German Tanks of World War Two* (Sterling, ISBN 978-1-85409-518-3), except for being about ½" too tall. However, the height in my reference matched a height posted on Wikipedia for a regular cargo RSO, a somewhat taller vehicle.

The model really looks good, and the level of detail is astounding. Only struggling through the errors in the instructions moved this model into the experienced modeler range — otherwise, it's a relatively easy build. Let's hope Dragon issues that standard cargo RSO soon!

– John Plzak

Italeri continues its line of unique 1/35 scale naval subjects with this new German World War II midget sub, the Biber (Beaver). The one-man craft went into action in 1944. Though more than 300 were produced, technical flaws and the progress of the war prevented them from being much of a threat to the Allied navies; losses far outnumbered successes.

The kit, neatly molded in gray plastic, has no flash or ejector-pin marks, and includes variations for the torpedoes, interior cabin detail, photoetched-metal parts, and two figures.

Construction is divided between the submarine body and the external torpedoes. I started the hull construction by painting and installing the cockpit details, which consisted of a seat, instrument panel, and multi-piece control wheel. You have the option of building the instrument panel by simply applying a decal to a smooth plastic piece or by using a different decal on the same piece and overlaying a photoetched-metal panel. The kit allows posing the hatch open to show off the interior.

Assembly of the main hull components was trouble-free. However, there are 21 photoetched-metal pieces for the sub's hull exterior; 14 photoetched-metal supports are bent to shape and attached to the hull's side rails. I found them troublesome, as the instructions were somewhat unclear; I wished there were optional plastic parts to use instead.

The conning tower windows are provided in die-cut clear acetate. Be careful here: The acetate sheet is flat, but the front and back "glass" must be curved properly for installation.

The torpedoes are built up from four main parts. A separate tail assembly allows for different versions, with variation in the steering controls. Propellers and warhead spinners finish the torpedo construction.

I painted my submarine with Tamiya acrylic and spray colors. Decals are given for six different craft and include plain numbers as well as several shark mouths. The decals performed well with the help of a little setting solution.

Italeri's kit provides a four-piece stand you can label with a decal. But perhaps the nicest finishing touch is the inclusion of two 54mm German naval figures, each comprising five pieces (counting the hat). Posing the model with a figure reveals just how tiny this little U-boat was.

My primary reference was *Ubootwaffe, Marine-Kleinkampfverbünde 1939-1945*, by Waldemar Trojca (Model Hobby, ISBN 978-83-919215-8-6). Compared with the book's photos and diagrams, the completed model looks convincing.

I banged out my Biber in a quick 16 hours, several of which were spent painting one of the two figures. An average builder who has some experience working with photoetched metal will enjoy this different and interesting 1/35 scale project. And if you like World War II German naval subjects, you will like this kit.

– Jim Zeske

Kit: No. 5609 **Scale:** 1/35
Manufacturer: Italeri, www.italeri.com, from Model Rectifier Corporation, 732-225-2100, www.modelrectifier.com **Price:** $56
Comments: Injection-molded, 101 parts (28 photoetched metal, 4 clear acetate), decals
Pros: Cleanly molded; logical layout; easy construction **Cons:** Unclear instructions for photoetched-metal parts

Trumpeter Su-25 "Frogfoot-A"

When you open the box to look at Trumpeter's Su-25A, you may be a bit overwhelmed by the sheer volume of pieces — 887 plastic parts! But once you get over the shock, you'll notice that 574 parts are for weapons and their associated hard points, sway braces, etc. This seems a little excessive, because the SU-25 has only eight hard points, but there are 90 assorted weapons.

Of course, the kit has a lot of other advanced features: A complete cockpit with photoetched-metal harnesses for the seat; open or closed canopy; landing gear with optional white-metal main struts; and two complete engines with engine panels that can be glued in place or left off. They're not friction-fit, though, so they won't stay in place by themselves.

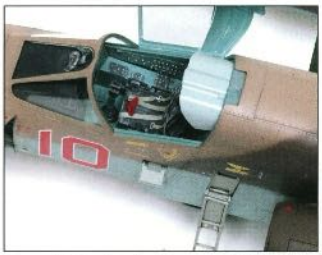
The two avionics bays in the nose have doors that can be glued opened or closed. I posed one open, one closed. You get a complete gun in the nose with an optional muzzle and a removable gun-bay cover.

The wings have posable slats, flaps, and ailerons — nicely engineered. You can also display the speed brakes and associated linkage. The horizontal and vertical stabilizers are posable, too.

WINGS WENT TOGETHER WITHOUT A HITCH

As mentioned, the weapons are the most extensive portion of the kit. You get: four S-24B rockets; two 2B-500 bombs; eight FAB-100 cluster bombs; two FAB-250 cluster bombs; two FAB-500 bombs; 16 9m-120 rocket tubes; four UB-32 rocket canisters; four UB-8MI rocket canisters; two KZ-58 rockets; four UPK-23/250 gun pods; two KAB-500L guided bombs; two KMGU-2 bombs; two KH-25MP missiles; two KH-25ML guided missiles; eight R-77 rockets; four S-250F bombs; four S-250FM bombs; two KAB-500KR guided missiles; four S-25L missiles; eight R-60MK missiles; and all the hard points and associated rails.

Construction starts with the cockpit. Despite all the fine molding there, the kit provides decals to put over all that nice relief on the side walls and consoles. I hard-painted these areas instead of trying to get the decals to settle into all those bumps and valleys. The instrument panel is in clear plastic with molded instrument lenses. Instead of just painting the instrument panel and applying the decal, I used liquid mask to cover the instrument dials, then painted the instrument panel. When the paint dried, I peeled off the liquid mask, then cut the instrument panel decal apart



Trumpeter's big Frogfoot is crammed with detail, from the 30mm GSh-2-30 and avionics bays in the nose (top) to the impressive cockpit (bottom left) and extensive underwing ordnance.

Kit: No. 2276 **Scale:** 1/32
Manufacturer: Trumpeter, www.trumpeter-china.com, from Stevens International, 856-435-1555, www.stevenshobby.com **Price:** $229.95
Comments: Injection-molded, 898 parts (5 photoetched metal, 3 white metal, 3 vinyl tires), decals **Pros:** Terrific detail; lots of construction options **Cons:** Challenging seams throughout; omissions and some confusion in the instructions

and applied the round instrument decal parts to the back of the panel where they would show through the previously masked dials. I placed the rest of the decals on the front of the instrument panel per instructions.

The nose gear is a multipiece assembly with the option of a white-metal core; I recommend it to support the weight you'll have to add to the nose later. I left the completed gear off until after painting and decaling. The gear and gun bays build into one unit that plugs into the fuselage halves in Step No. 9.

You get two nicely detailed engines, but you'll never see them again unless you leave the engine bay covers off. You do have to assemble the basic components so you can see the intake trunking and exhausts, but other than that I just buttoned everything up.

Selecting one of the two avionics bays, I closed the starboard side and left the port side open. The instructions are unclear as to whether the avionics bay doors should open to the rear or upward.

To be able to clamp the parts, I departed from the instructions by gluing the engine pods to the fuselage halves. After the glue dried, I weighted the nose (I'm not sure how much, just so it would balance), then joined the fuselage halves.

There is one part that still has me puzzled: Step 8 installs two scoops (parts K6 and K11) on top of the engine pods. It wasn't until I had the model painted and decaled that I noticed the strakes on top of the engine pods. I had seen the kit parts, but I thought they might be for a later version. I didn't put two and two together until it was too late. So, I didn't follow the instructions — but I still don't know if the mistake is mine or Trumpeter's.

The wings went together without a hitch. To save time, I closed the speed brakes. Step 16 shows the canopy closed, but I posed mine open. The wing/fuselage joint was good, and the rest of the assembly went off without a hitch.

Seams were an ongoing challenge throughout the build. The problem wasn't the fit side to side — those seams were fairly tight — but a "step" from side to side that had to be filed and sanded level. This applied to the fuselage halves, engine pods, weapons, even the weapons pylons.

I chose the rocket canisters, but the contact points between the sway braces and the rocket canisters isn't that strong. Be careful there.

Getting the paint colors right for the camouflage took some doing. The instructions reference Gunze Sangyo Mr. Hobby numbers, but I use Testors Model Master almost exclusively. Fortunately, the directions provide a cross-reference. But I still had to do some checking and make another trip to the hobby shop.

The decals went on fine and laid right down. The kit provides markings for two Russian and two Czech planes. I chose the plain-Jane Russian "Red 10."

Except for the seam issues and color confusion, everything went OK. It took me about 37 hours to complete the model, but you should have some modeling experience before taking on this Frogfoot.

– Larry Schramm

Academy CV9040B Swedish IFV

The CV90 series of vehicles is Sweden's version of the infantry fighting vehicle, similar to the American Bradley or British Warrior. The CV90 carries a crew of three plus eight infantrymen.

Academy's kit is molded in light tan plastic, with clear vision blocks and lights. Molding quality varies: The upper hull and turret feature anti-slip surfaces and louvered grilles, but have knockout and sink marks that need filling. Hatches are molded separately and have interior detail, but two large sink marks on the engine hatch were difficult to fix without damaging detail. A photoetched-metal fret, turned-metal barrel, and poly caps are also included. For several items, you can use either photoetched-metal or plastic pieces.

Kit: No. 13217 **Scale:** 1/35
Manufacturer: Academy, www.academy.co.kr, from Model Rectifier Corporation, 732-225-2100, www.modelrectifier.com **Price:** $57.95
Comments: Injection-molded, 686 parts (29 photoetched metal, 26 vinyl, 1 metal), decals **Pros:** Inclusion of metal gun barrel; choice of vinyl or individual-link tracks; plastic alternates for photoetched-metal pieces **Cons:** Poor fit of hull halves; numerous sink marks and ejector-pin marks

The lower hull has a large, square hole that Part E25 is supposed to close, but the fit is poor and needs filling. I glued the engine hatch (Part E1) in place to help strengthen the upper hull. A little filler above the tracks was required in the join of upper and lower hulls. By gluing the hull halves first, I was able to properly align the rear hull plate. I tacked the side skirts to the hull for painting camouflage, but removed them to assemble the track.

I left the driver's hatch operable. There is some play in the hatches; make sure they are centered, or there will be gaps. I left off the tools, rear antenna, vision blocks, and lights for painting. Take care with the collapsible storage racks at the rear. Parts E13 and E14 were missing a hole for the tab on E45/E46, but that was easily fixed. I assembled the whole rack on a flat surface, then glued it to the rear hull.

The kit provides vinyl tracks as well as individual links; the individual track links are molded in black styrene, with separately molded track pads. I chose the individual links but used only enough for the bottom, front, and back runs; the rest of the running gear is hidden under the skirts. I left off the pads until I had assembled and painted the track runs, then painted them with Tamiya rubber black and glued them.

I glued the turret halves, which needed filler, then glued the commander's hatch down to hide hard-to-remove knockout marks on its inside. Given the option of a one-piece plastic or turned-metal barrel, I chose the latter. It can elevate, but it made more sense to glue it down to ensure alignment of Part D16 above the gun. I left clear parts and the antenna off the turret until after painting.

A commander and gunner figure are included; I built the gunner to show what the figures look like, but skipped the commander to avoid showing the inside of its hatch.

Images on the Internet show several schemes for this vehicle: black and white; NATO tricolor; and black with different greens. I followed the kit directions, though the dark illustration made it difficult to distinguish black from dark green; a color illustration would be helpful.

The decals are generic, with only a choice of one or two license plate numbers. The decals went down over gloss without silvering.

It took 35 hours to finish this kit, mostly for masking the camouflage and assembling the tracks. With the choices of metal or styrene parts, and vinyl or individual-link tracks, novices as well as superdetailers can be satisfied with this kit and add a distinctive model to their armor collection.

– Mike Scharf

Revell Germany Trilux AMG Mercedes C-Klasse DTM 2009 "Timo Scheider"

I didn't know a lot about the DTM racing series (Deutsche Tourenwagen Masters, or German Touring Car Masters) other than it ran only German makes that looked like their street versions on steroids. So, when I saw one of these Revell Germany kits, I had to give it a try — and I'm glad I did!

I was impressed as soon as I opened the box. The multipiece body exhibits excellent detail and proportions. The only drawback is there are several sink marks throughout the main bonnet and driver's greenhouse. I contemplated some serious bodywork here, but as I studied the decal placement sheets I realized most of them would be covered. However, I did have to do some seam sanding with 600-grit filing sticks.

I prepped the body pieces for paint, but before applying the color coat I wanted to find a couple of pictures of the real car to verify a few things. Good thing! The car is not the gloss black called for in the instructions. I needed a semigloss clear to duplicate the pictures I had found; I painted the body pieces black, decaled them, then sprayed semigloss clear over them for a uniform finish. The rest of the body details went together with no problems.

The decal sheet is very nice, but there are no white color swatches for the windshield pillars. I used my airbrush and some pure white to fog them in.

The engine assembly is a bit simplistic, but the engine cover and hood hide most of it. Decals depicting carbon fiber for the valve covers are a nice touch.

The front and rear suspensions are also simplified, and they're easy to put together. The front wheels can move as if steered. The instructions have you melt both ends of the tie-rod assembly, but I found the pieces fit tightly enough that you can skip this and still turn the wheels.

DECALS DEPICTING CARBON FIBER ... ARE A NICE TOUCH

The wheels and tires build up beautifully as well. The rims are chrome plated; strip those and paint them aluminum to be accurate. The tires have no mold seam in the center and can easily be sanded for a track-used appearance. Make sure you carefully mark each rim/tire after building it so the brake calipers are positioned correctly. (I forgot to do this and had to hunt for a few reference pictures!)

I had no problems assembling and painting the chassis pan and interior tub. I did take a few liberties with the color instructions, though. I painted some of the interior components gunmetal to simulate the carbon fiber of the real car, whereas the instructions tell you to paint everything with shades of black. The gunmetal components make the interior much more interesting.

Final assembly proved a bit tricky. If the engine cover is not completely down in the front, the hood will not close. I also suggest not gluing the rear section of the body in place; the hood needs to slide underneath the front edge.

I was wowed by this kit, and the finished model is excellent. I just may have to pick up the other touring cars to complete the set!

–Jay Savarese

Kit: No. 07128 **Scale:** 1/24
Manufacturer: Revell Germany, 49-05-223-965-0, www.revell.de **Price:** $41.45
Comments: Injection-molded, 110 parts, decals **Pros:** Excellent body details, ride height, and profile
Cons: Missing windshield-pillar decals; sink marks all over body; tricky final assembly

Zvezda Tiger I

Zvezda's 1/72 scale snap-fit Tiger I (early production) is breaking new ground as a tank the wargaming crowd will enjoy. The kit comes molded in tan plastic with tracks molded in black plastic and markings for three vehicles.

The model represents an early-production Tiger I with its Feifel sand/air cleaners and S-Mi35 anti-personnel mine dischargers. It does not have all five mine dischargers, though; the one by the commander is missing. The pistol port on the turret side sticks out too far for purists, too. With some photo references, you can make different early production models by filling in the holes for the air cleaner and mounting spare tracks on the hull front to build a tank for North Africa or the Eastern Front.

After building and painting the hull, I assembled the running gear. Having the road wheels molded as a single group made for a painting challenge. I painted them Tamiya dark gray and airbrushed through a circle template to define the rims. The instructions show the road-wheel assembly snapped together with the tracks, but I had my misgivings about how well that would work. Putting the assembly on the lower hull and snapping the track together broke the little axles off the hull. I did one track without reshaping it, and the track broke. Reshaping it with my hands brought it around. I would suggest building the entire running gear off the model, then installing it on the hull sides.

The turret comprises four pieces, with the storage box molded on and hatches closed. A mold seam halfway up the turret side needed to be sanded off. No smoke dischargers were provided for the turret. A decal is provided to simulate the hole at the end of barrel, but it's easier to just drill it out. The turret assembly does not fit without modifying the locking tabs.

I painted the model with Tamiya dark yellow (XF-60) and used Tamiya NATO green (XF-68) for the striped camo scheme. Decals did silver a bit after drying; I used some Solvaset to get them to settle down.

It took me all of five hours to build this little Tiger, with more than half of the time devoted to painting. If you're not fanatical about details and just looking for some fast fun, this is a good kit for you.

– Tom Foti

Kit: No. 5002 **Scale:** 1/72
Manufacturer: Zvezda, www.zvezda.org.ru, from Dragon Models USA, 626-968-0322, www.dragonmodelsusa.com
Price: $14.95 **Comments:** Snap-fit, injection-molded, 56 parts, decals **Pros:** Quick and easy **Cons:** Poorly fitting tracks; missing detail; some smaller parts don't snap in place

Revell Germany Battleship *Tirpitz*

Sister ship of Germany's legendary battleship *Bismarck*, the *Tirpitz* was launched in the spring of 1939. Although she was about three meters longer than *Bismarck* — making her Germany's biggest battleship — she was largely held from action for fear of her being sunk as *Bismarck* was in May 1941. *Tirpitz* spent most of the war moored in Norway, where she was attacked several times before finally being sunk by Royal Air Force Lancasters in November 1944.

Revell Germany's new kit is differentiated from its earlier *Bismarck* by three sprues that provide the subtle differences between the sister ships. The light gray plastic features excellent molded detail on the deck and superstructure. In fact, the level of detail is extraordinary for a 1/700 scale ship. Main turrets rotate, and the guns and cranes elevate. There are even options for searchlight housings on the stack platform. Some of the gun shields look thick, but most of the tiny parts are more to scale than on most 1/700 scale warships.

The 20-page instruction booklet includes a symbols key, paint color guide, parts list, and directions for two camouflage schemes. Decals are provided for camouflage panels in one of those schemes, which is useful for very fine points and the boot stripe. (The paint guide is in black and white; it would have been more helpful printed in color.) The directions are clear and present a logical building sequence in 53 assembly steps. However, I left steps 19 and 20 (boat spars) and Step 27 (floatplanes) until the end to make the model easier to handle.

The parts fit is generally excellent, but there are large horizontal seams between major superstructure deck levels. I had to use styrene strips and rods to fill and cover those seams. I filled minor gaps at the bow and between superstructure pieces with gap-filling super glue.

In addition to gaps in prominent places, the kit has a few other shortcomings. Although turrets turn and their guns elevate, no blast bags are provided for the main and secondary turrets. The floatplanes look crude compared with other finely detailed pieces. And there is no option for a waterline version.

Then there are the decals. They were thick and unresponsive to Solvaset decal-setting solution. I was left with some "orange peel" effects, and adhesion was poor. I would advise skipping the camouflage decals and painting instead, or replacing them with aftermarket decals. And you'll need to shop the aftermarket if you want swastikas — none are in Revell Germany's kits, as they are forbidden by law.

Still, I think the kit is as good as or better than any other in this scale. Revell Germany has really done its homework in producing an accurate model of the *Tirpitz*. Its dimensions varied less than 1 percent from my references, which included the websites www.bismarck-class.dk and www.kbismarck.com, as well as Siegfried Breyer's book *Battleship* Tirpitz (Schiffer, ISBN 978-0-88740-184-8).

This kit is definitely not for beginners, and even experienced ship modelers will have a hard time with the complicated build and large number of small pieces. The parts count and intricate paint job made this build more than 50 hours. Adding aftermarket decals and photoetched-metal railings, AA guns, radars, and other fittings could make this a contender in any contest.

– Luke R. Bucci

Kit: No. 05099 **Scale:** 1/700
Manufacturer: Revell Germany, 49-05-223-965-0, www.revell.de **Price:** $40
Comments: Injection-molded, 321 parts, decals **Pros:** Accurate dimensions; clear instructions; logical build sequence
Cons: Large gaps around superstructure; no blast bags; thick decals with poor adhesion

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FL, VENICE: 16th Annual Model Contest & Show. Hosted by IPMS/Wings, Wheels & Keels Model Club, at Woodmere Park Auditorium. Saturday, April 9, 2011. Free Admission. Contact Randy Whitacre 941-627-3880 or Ken Zuk 941-426-0774. E-mail: mazkaz102@verizon.net

MA, TAUNTON: MassCar Model Club & Cape Cod Scale Modelers Club present the 23rd Annual Model Exhibition Contest & Vendor Show. Holiday Inn, Bay Road @ Exit 9 on Route 495. March 20, 2011 9-4pm. Admission: $5, under 12 Free. Information: www.masscar.com Harry @ 508-285-8080. Door prizes, coloring contest and make & take event.

VA, FAIRFAX: IPMS Northern Virginia Model Classic 2011. Fairfax High School. 3501 Rebel Run. April 30, 2011. Saturday 9:00am-4:00pm. Adult Contestants $11.00, unlimited models. Walk-ins $8.00, family $10.00. Junior Contestants/walk-ins 17 and under FREE. Theme award "The Line In the Sand". Contact: Mike Neyland: 703-455-6248, mjneyland@aol.com or POC Tom Henderson: 703-680-9354, tomhenderson51@verizon.net or visit: www.novaipms.org

WA, RENTON/SEATTLE: IPMS Seattle Spring Show, Renton Community Center, 1715 Maple Valley Highway. Saturday, April 9th, 2011, 9:00am-4:00pm. Largest model contest and display in Pacific Northwest. Contest: 100 different categories: Aircraft, Armor, Automobiles, Figures, Dioramas, Ships, Sci-Fi, Space, etc. VENDORS! Adult Entries: $10, Junior Entries: $5. Contact Jon Fincher, 206-588-5663, visit www.ipms-seattle.org for more details.

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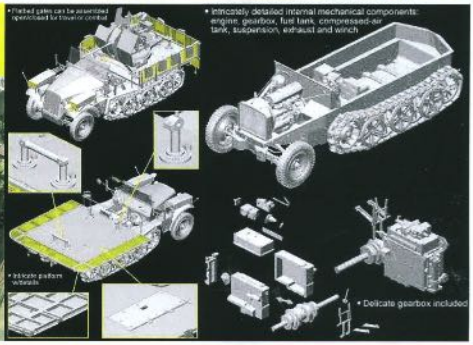
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